Bombay Geographical Society

Vol. 18

00160009

THE
ASIATIC SOCIETY OF BOMBAY
Town Hall, Bombay.

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THE

TRANSACTIONS

OF THE

BOMBAY GEOGRAPHICAL SOCIETY.

FROM JANUARY 1865 TO DECEMBER 1867.

(EDITED BY THE HONORARY SECRETARY.)

VOLUME XVIII.

Bombay:
PRINTED AT THE
EDUCATION SOCIETY'S PRESS, BYCULLA.

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RULES AND REGULATIONS.

1st.—This Society, established for the purpose of encouraging and instituting Geographical researches in Western Asia, and the countries contiguous, is denominated the "Bombay Geographical Society."

2nd.—The Society shall consist of Honorary and Ordinary Members.

3rd.—Every candidate for admission, whether as an Ordinary or Honorary Member, must be proposed and seconded at one Meeting of the Society, and balloted for at the next.

4th.—No person shall be considered duly elected, unless he unite in his favour the votes of three-fourths of the Members present.

5th.—An annual Subscription, amounting to Rs. 15, to be paid by all Members in advance, on the 1st of April of each year.

6th.—Members may compromise, by a single payment of Rs. 100 instead of a payment of Rs. 15 annually.

7th.—*Of the Office-Bearers and Committee.*—The Office-Bearers shall consist of a President, a Secretary, and Treasurer,—permanent; three Vice-Presidents, and a General Commitee of Management (consisting of 20 Members), to be chosen annually.

8th.—That the Committee of Management and other Office-Bearers of the Society eligible annually, shall be chosen by general vote of the Ordinary Members, to whom voting lists shall be forwarded three months previous to the Anniversary Meeting, at which the returns shall be scrutinised and announced.

9th.—Two Sub-Committees, consisting of six Members each shall be annually selected from among the Resident Members of the General Committee, at the first meeting after the annual election of the latter. The Sub-Commmittee having the superintendence of all the internal management, account, &c., of the Society, shall be denominated the "Sub-Committee of Accounts:" the other shall conduct the correspondence of the Society, and suggest plans for attaining its scientific objects—to be called "The Sub-Committee of Correspondence."

10th.—The Secretary shall be a Member of the Committee of Management *ex-officio*.

11th.—Each Sub-Committee can meet independently of the other for the purpose of discharging the business especially entrusted to it; and the meeting shall be summoned by a circular from the Secretary.

12th.—The Sub-Committee of Accounts shall lay before the Annual General Meeting, to be held in May or April of each year, the state of the Society's Funds. The Sub-Committee of Correspondence shall lay before the same Meeting a list of the Scientific Contributions made to the Society during the year.

13th.—Each Sub-Committee shall elect, from among its Members, a President to preside at its meetings.

14th.—The President shall preside at the General Meetings of the Society, to conduct the proceedings, and give effect to the Resolutions.

15th.—The Vice-Presidents shall preside at the General Meetings in the absence of the President, and in rotation at Meetings of the General Committee of Management.

16th.—The Secretary shall attend the Meetings of the Society and those of the Committee, to record their proceedings and conduct the correspondencce. He shall also superintend the persons employed by the Society, and under the control of the Committee for managing the accounts, shall superintend the expenditure of the establishment.

17th.—The Treasurer will receive, through the Secretary, all monies due to the Society, and make payments out of the funds of the Society, according to the directions of the Secretary.

18th.—The Society shall meet on the third Thursday of every month, at 4-30 P.M.

19th.—Notice shall be given, either at a previous Meeting, or to the Secretary, of any motion or subject of discussion intended to be brought before the Meeting, at least one week beforehand; and all matters of business, &c., intended to be brought before the Society, shall be notified to the Members by printed circulars.

20th.—Each Member may introduce a friend to all ordinary Meetings of the Society.

21st.—The Society shall present copies of its transactions to the principal Public Libraries in India, Europe, and America; and exchange

them with Societies, and with such authors or publishers as may be disposed to bestow works of equivalent value, or nearly so, on the library of the Society.

22nd.—All Members of the Bombay Branch of the Royal Asiatic Society are entitled to be admitted Members of the Geographical Society, on making application to this effect through the Secretary, and paying the prescribed annual Subscription.

23rd.—In the event of a vacancy in the office of President, the Committee shall proceed at their Meeting next ensuing after the vacancy, to select the name of one gentleman for the office, who shall be proposed at the General Meeting thereafter first held for election.

LIBRARY REGULATIONS.

The following are the Rules in force for the Management of the Library :—

1st.—The Books of the Geographical Society's Library may be taken out by Members, subject to the following exceptions and restrictions.

2nd.—No Book shall be delivered out by the Librarian, unless the Member requiring it shall either sign the entry in the Register, or send a receipt to him.

3rd.—No Member shall keep any Book longer than fourteen days.

4th.—Any Member requiring a Book which has been delivered out may insert, or cause to be inserted, his name in a Register kept for that purpose; and it shall be the duty of the Librarian to apply for it as soon as the period specified in the above rule has expired, and, on receipt, to forward it to the first on the list of applicants if there be more than one.

5th.—Not more than three volumes to be taken out at one time by any Member.

6th.—The Librarian shall inspect carefully every Book at the time it is returned, and, if damaged, shall report the circumstance to the Secretary.

7th.—Any Book lost or damaged, shall be charged to the Member in whose name it stood in the Register, at the invoice price, or such price as shall be fixed by the Committee of Management.

8th.—Members leaving Bombay, are required to return before their departure, to the Library, all Books belonging to it in their possession,—and no Book shall be carried out of Bombay.

9th.—No Map, Chart, Atlas, or Book of Reference, shall be taken out without express permission from the Committee of Management, except Books of Reference (for 48 hours) on the order of the Secretary to that effect.

10.—Any Member may propose Books, Charts, Maps, or Atlases to be added to the Library, by inserting their names in a Register kept for that purpose, and they will be ordered or not as the Committee may deem expedient.

11.—Every new Work, Map, Chart, &c., shall lie on the table one month before it is taken out.

BOMBAY GEOGRAPHICAL SOCIETY.

(ESTABLISHED IN 1832.)

Patron.

His Excellency the Right Honourable Sir WILLIAM ROBERT SEYMOUR VESEY FITZGERALD, *K.C.S.I.*, Governor of Bombay.

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Lieutenant HENRY MORLAND, *F.R.A.S.*, *F.R.G.S.*

Clerk and Librarian.

Mr. BALVANT KRISHNARA'O PA'LEKAR.

Members.

(To April 1868.)

[*N.B.—Those having * preceding their names have compounded for life. Those having † are absent from India.*]

Year of Election.		Year of Election.	
1862	Annesley, Major J. T.	1862	Framjee Nusserwanjee, The Honourable.
1864	Arnot, Lieut. W. P.	1865	40 Fraser, Dr. A. G.
1859	Atmaram Pandurang, Esq., *G.G.M.C.*	1865	Fuller, Lieut. Col. J. A., R.E.
1843	*† Barker, Captain W. C.	1865	Gell, Colonel J. S.
1862	Barr, Colonel H. J.	1864	† Gell, Rev. F., *B.A.*
1866	Bayley, The Honourable L. H.	1867	Gibson, Alexander, Esq.
1853	*Bháu Dáji, Esq., *G.G.M.C., Hon. M.R.A.S.*	1867	Gostling, D. E., Esq.
1864	Bhugwandass Purshotumdass, Esq.	1862	Grant, Sir Alexander, Bart., *LL.D.*
1859	Birdwood, G. C. M., Esq., *M.D.*	1864	Gumpert, A. C., Esq.
1864	10 Brasher, A., Esq.	1864	† Hayllar, Thos. C., Esq.
1865	Buller, Commander A., *R. N.*	1865	Heerjeebhoy Merwanjee Wadia, Esq.
1862	Burgess, J., Esq., *F.R.G.S., M.R.A.S.*	1865	50 Henry, Capt. George F.
1863	BurjorjeeSorabjeeAshburner, Esq.	1863	Homjee Cursetjee Dady, Esq.
1861	Burn, Lieut. H.	1860	Hope, T. C., Esq., *C. S.*
1865	Burns, Jerome, Esq., C.E.	1862	† Hughlings, J. P., Esq., *B.A.*
1864	Burnes, Lieut. H.	1836	*† Jacob, General G. LeGrand, *C.B.*
1860	Byramjee Jejeebhoy, Esq.	1865	Jehangeer Goostadji, Esq.
1865	Byramjee Nanabhoy Framjee, Esq.	1851	Jejeebhoy, Sir Jamsetjee, Bart., *F.R.G.S.*
1863	Candy, F. J., Esq., *M.A.*	1865	Johnstone, Surgeon Major T. B., *M.D.*
1864	20 Carpendale, Lieut. T. C. R.	1865	Jones, Capt. William Gore, *R.N.*
1866	Cleary, J. F., Esq.	1864	† Jones, Colonel Jenkin, *R.E., F.R.G.S.*
1865	† Cleveland, H. Esq.	1863	60 * Kama, K. R., Esq.
1862	† Coghlan, W. M., Esq., *C.S.*	1863	Karsandass Madhavadass, Esq.
1865	† Coke, H., Esq., *M.A.*	1863	Keir, C. M., Esq.
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1863	Cursetjee Furdoonjee Paruck, Esq.	1867	King, R. L., Esq.
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1865	Dawes, E., Esq.	1863	† Knight, Robert, Esq.
1864	30 † Dawes, E. S., Esq.	1865	Kulliandas Mohundas, Esq.
1865	Dheerujram Dulputram, Esq., *G.G.M.C.*	1863	† Lalor, Assistant Surgeon James, *B.A.*
1849	Dhunjeebhoy Framjee, Esq.	1865	70 Leith, J. P., Esq.
1865	Dinshaw Manockjee Petit, Esq.	1865	McClelland, W., Esq.
1862	Diver, Thomas, Esq., *M.D.*	1865	† Macdonald, J. D., Esq.
1862	Faulkner, A., Esq.	1868	MacDonald, J., Esq.
1863	Firth, John, Esq.		
1865	Foggo, The Honourable George.		
1862	† Forjett, C., Esq.		

Year of Election.	
1865	Macfarlane, J., Esq.
1866	Mackinlay, J., Esq., *F.R.G.S.*, *M.R.A.S.*
1860	† Maclean, J. M., Esq.
1850	McLeod, The Honourable Sir D. F., *C.B.*, *K.C.S.I.*
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1863	Manockjee Sorabjee Ashburner, Esq.
1860	Mansfield, His Excellency General Sir Wm. R., *K.C.B.*, *G.C.S.I.*
1860	Morland, Lieut. Henry, *F.R.G.S.*, *F.R.A.S.*, Honorary Secretary.
1864	Morrison, Frank A. R., Esq.
1855	Munguldas Nuthoobhoy, The Honourable.
1848	Munmohundas Davidas, Esq.
1855	† Murray, Lieut. Colonel A. M., *R. A.*
1867	Napier, His Excellency Lieut. General Sir Robert, *G.C.S.I.*, *K.C.B.*, President.
1854	Narayan Dinanathji, Esq.
1863	Newton, The Honourable H., *C. S.*
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1865	Nowrojee Manockjee Wadia, Esq.
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1865	Pelly, Lieut. Col. Lewis.
1864	Pelly, Deputy Inspector General of Hospitals S. M., *F.R.C.S.*
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1868	Pickering, F. W., Esq.
1864	* Premchund Roychund, Esq.
1864	† Pringle, R. J., Esq.
1859	Pryce, J. E. C., Esq., *F.R.G.S.*
1860	† Reid, R. T., Esq., *LL.D.*
1849	† Ritchie, John, Esq., *F.R.G.S.*
1859	Robinson, Commander G. T.
1851	* Ross, Surgeon Major J. T. C.
1863	Rustomjee Jamsetjee Jejeebhoy, Esq.
1863	* Rustomjee Ardaseer Wadia, Esq.
1865	Rustomjee Heerjeebhoy Wadia, Esq.
1863	† Sands, J., Esq., Jr.
1864	Scorgie, James, Esq., *F.C.S.*
1865	Scott, Mathew Henry, Esq., *C. S.*
1862	Searle, Lieut. W. L., *F.R.A.S.*
1866	Shepherd, Surgeon W. A.
1865	† Showell, R. H., Esq.
1854	Sinclair, R. S., Esq., *LL.D.*
1855	Sorabjee Jamsetjee Jejeebhoy, Esq.
1863	Sorabjee Pestonjee Framjee, Esq.
1864	Sorabjee Framjee, Esq.
1864	Souter, F. H., Esq.
1863	Stearns, W. F., Esq.
1863	† Steel, Gavin, Esq.
1862	† Stevens, W. T., Esq.
1859	Stiffe, Lieut. A. W., *F.R.AS.*
1863	Swan, H. H., Esq.
1865	Swinhoe, Lieut. C.
1860	Sylvester, Surgeon, J.H., *F.G.S.*
1864	Tapp, Brigadier General Thomas, *C.B.*, A.D.C. to the Queen.
1865	Taylor, A., Esq.
1864	Taylor, James, Esq.
1863	Terry, G. W., Esq.
1867	Thenon, The Chevalier A.
1866	Thompson, Capt. E. P. H.
1865	Tippett, H. H. G., Esq.
1849	Venayekrao Juggonnathjee Sunkersett, Esq.
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1866	Walton, R. G., Esq., *C.E.*
1864	Ward, Deputy Inspector General of Hospitals T. W., *F.R.C.S.*
1865	Warner, H., Esq., *I. N.*
1868	White, James Sewell, Esq.
1865	Whitley, E. R., Esq.
1865	Wilkins, W., Esq.
1865	Wilkins, Lieut. Col. H. St. Clair, *R.E.*
1859	† Williams, Lieut. R.
1854	† Willis, Richard, Esq.

Honorary Members.

The following list contains the names of those who have been elected Honorary Members of the Society from its original institution to the present time:—

Avezac, Monsieur D'.
Bache, Professor A.D., U.S.C.S.
Bergaus, Professor Heinrich.
Black, Captain Thomas, *F.R.G.S.*
Du Pont, Captain, U.S. Navy.
Frere, W. E., Esq., *F.R.A.S.*, *F.R.G.S.*
Greni, H. E. M. La.
Johnston, Alexander Keith, Esq., *F.R.G.S.*, *F.R.S.E.*
Jomard, Monsieur E. F., Member Inst. France.
Krapf, the Rev. Dr. J. Lowis.
Kennelly, D. J., Esq., *F.R.G.S.*, *F.R.A.S.*
Leeke, Admiral Sir H., *K.C.B.*, *K. H.*
Lloyd, Rev. Humphrey, *D.D.*, *D.C.L.*
Lyell, Sir Charles, *M.A.*, *L.L.D.*, *F.R.S.*
Markham, Clement R., Esq., *F.R.G.S.*
Maury, Admiral M. F., U. S. Navy.
Morreau, Cæsar, Esq.
Oberreit, Major General.
Osborn, Captain Sherard, *C.B.*, *R.N.*, *F.R.G.S.*
Sabine, Major General Edw., *R.A.*
Schlaginweit, Herman de, Esq.
Shaw, Dr. H. Norton, *M.R.C.S.* &c.
Somerville, Mrs. Mary.
Washington, Admiral John, *R.N.*, *F.R.S.*, Hydrographer to the Navy.
Wellesley, Admiral G. G., *C.B.*, *R.N.*

LIST OF PUBLIC INSTITUTIONS, &c.,

TO WHICH COPIES OF THE TRANSACTIONS ARE PRESENTED.

GREAT BRITAIN AND IRELAND.

Aberdeen University Library.
Antiquaries, Society of.
Asiatic Society, President of the.
British Museum, Library of the.
Cambridge University Library.
Dublin University Library.
Edinburgh University Library.
Glasgow University Library.
Hakluyt Society.
Hydrographer of H. M.'s Lords of the Admiralty.
Literary and Philosophical Society of Manchester.
Oxford University Library.
Peninsular and Oriental Steam Navigation Company.
Queen's College, Cork, Library of the.
Ditto do. Belfast, Library of the.
Royal Asiatic Society of Great Britain and Ireland.
Royal Geographical Society of London.
„ Institution of Great Britain.
„ King's College.
„ Naval College.
„ Observatory of Greenwich.
„ Royal Society of London.

EUROPE.

Berlin Geographical Society.
Christiania University.
Darmstadt ditto.
Dresden Geographical Society.
Frankfort ditto ditto.
Munich Royal Academy of Science.
Paris Asiatic Society.
Paris Ethnological Society.
„ Geographical Society.
„ Oriental Society.
„ University Library.
St. Petersburgh Imperial Geographical Society.
Vienna Imperial Geographical Society.

ASIA.

Agri-Horticultural Society of Western India.
Bombay Branch Royal Asiatic Society.
„ Chamber of Commerce.
„ Elphinstone College.
„ Government.
„ Grant Medical College.
„ Mechanics' Institution.
„ Medical and Physical Society.
„ Native General Library.
„ Observatory.
„ Students' Literary and Scientific Society.
„ University.
„ The "Bombay Gazette."
Bombay, The "Bombay Guardian."
„ The "Times of India."
Calcutta, Asiatic Society of Bengal.
„ Meteorological Society.
„ Surveyor General's Office.
„ The "Englishman."
„ The "Friend of India."
Ceylon Asiatic Society.
Geological Survey of India.
Government of India.
Inspector General, Indian Medical Department.
Madras Government.
Madras Literary Society.
„ Observatory.

AFRICA.

Cairo Literary Society.
Mauritius Meteorological Society.
Mauritius Royal Observatory.

AMERICA.

Boston Society of Natural History.
New York Geographical and Statistical Society.
Smithsonian Institution, Washington.
Surveyor General, Washington.
United States Coast Survey.
Washington Naval Observatory.

AUSTRALIA.

Surveyors General, Australia.
Surveyor General, Victoria.
Sydney, St. Paul's College, Library of.

ALPHABETICAL LIST OF DONORS.

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Graham, Lieutenant Colonel J. D.
Meldrum, C., Esq.
Osborn, Captain Sherard, C. B., R.N., F.R.G.S.
Rughoonath Damodhur, Esq.
Surveyors General, Australia.
Surveyor General, Victoria.
Surveyor General, Washington.

Societies and Public Institutions.

Agri-Horticultural Society of Western India.
Bombay Branch Royal Asiatic Society.
Bombay Chamber of Commerce.
Bombay Government.
Bombay Grant Medical College.
Bombay Mechanics' Institution.
Bombay Medical and Physical Society.
Bombay Students' Literary and Scientific Society.
Boston Society of Natural History.
Geographical Society of Dresden.
Geographical Society of Paris.
Geological Survey of India.
Government of India.
Imperial Geographical Society of Russia.
Imperial Geographical Society of Vienna.
Inspector General, Indian Medical Department.
Literary and Philosophical Society of Manchester.
Meteorological Society of Calcutta.
Meteorological Society of Mauritius.
Royal Asiatic Society of Great Britain and Ireland.
Royal Geographical Society of London.
Royal Institution of Great Britain.
Royal Observatory of Greenwich.
Royal Society of London.
Royal University of Frederick.
Smithsonian Institution, Washington.
United States Coast Survey.
United States Naval Observatory.
University of Christiania.

PROCEEDINGS

OF THE

BOMBAY GEOGRAPHICAL SOCIETY.

SESSION 1864-65.

FIFTH MEETING.—*January 19th*, 1865.

THE ordinary Monthly Meeting of the Bombay Geographical Society was held in their New Rooms, on the basement story of the Town Hall, on Thursday, the 19th January, at half-past 4 P.M.

Present.—Capt. T. Black, *Vice President*, in the Chair; Capt. W. C. Barker, *Vice-President;* J. Burgess, Esq., F.E.I.S.; Burjorjee Sorabjee Ashburner, Esq.; Bháu Daji, Esq., G.G.M.C.; James Taylor, Esq.; Venayekrao Jugonathjee, Esq.; G. C. M. Birdwood, Esq., M.D.; Premchund Roychund, Esq.; J. E. C. Pryce, Esq.; F. A. R. Morrison, Esq.; Surgeon Major T. W. Ward, F.R.C.S.; Lieutenant Henry Morland, F.R.A.S.; Brigadier General T. Tapp, C.B.; Mirza Ali Jan, Esq.; Atmaram Pandoorang, Esq., G.G.M.C.; M. Kane, Esq., M.D., M.A.; Captain A. Phillips; J. Scorgie, Esq., F.C.S.; Rao Saheb Vishvanath Narayan Mándlik, *Members;* and D. J. Kennelly, Esq., *Corresponding F.R.G.S. Secretary.*

The Minutes of the last Meeting were read and confirmed.

Elections.—H. Cleveland, Esq.; H. Coke, Esq., M.A.; C. Leggett, Esq.; J. Macfarlane, Esq.; A. Taylor, Esq.; Captain J. A. Fuller, R.E.; Lieut.-Colonel A. M. Murray, R.A.; Dinshaw Maneckjee Petit, Esq.; Surgeon Major T. B. Johnstone, M.D.; Jerome Burns, Esq., C.E.; George Foggo, Esq.; and Kulliandass Mohandass, Esq.

Members proposed.—H. H. G. Tippett, Esq.; Lieutenant C. Swinhoe; Rev. Alexander Forbes, M.A.; and R. H. Showell, Esq.

Donations.—The undermentioned donations were laid before the Society, for which their best thanks were directed to be conveyed to the donors :—

1. Report on the Government Central Museum and on the Agricultural and Horticultural Society of Western India, for 1863. By Government.
2. Deaths in Bombay during 1863. By the Principal Inspector General, Medical Department.
3. Papers relating to the Cost of Working the several Branches of the Railway Traffic. By Government.
4. Observations on the influence of Forests, and on the general principles of management, as applicable to Bombay ; by N. A. Dalzell, Esq., M.A.,F.R.S.E., Conservator of Forests, Bombay Presidency. By Government.
5. Proceedings of the Imperial Geographical Society of Russia. By the Society.

Letters.—The following letters were read :—

1. From Lieutenant W. T. Crockett ; 2. from Lieutenant A. Phillips, and 3. from His Excellency Rear Admiral Geo. St. Vincent King, C.B., acknowledging with thanks the Society's intimation of their having been elected Members of the Society. 4. Memorandum from Lieutenant Colonel M. K. Kennedy, Secretary to Government, forwarding one copy of "Papers relating to the Cost of Working the several Branches of Railway Traffic." 5. From Jerome Burns, Esq., C.E., and George Foggo, Esq., intimating their desire to become members of the Society. 6. From Messrs. Remington & Co., advising of their having received from the Honorable W. E. Frere, the sum of Rs. 5,000, on account of the Society ; and the following was addressed to the President :—

"*Bombay, 5th January* 1865.

To The Honorable W. E. Frere,
President of the Bombay Geographical Society.

Dear Sir,

I do myself the pleasure of enclosing a cheque for Rs. 5,000 as a New Year's Gift to the Bombay Geographical Society, and request you

will have the goodness to apply that sum towards the purchase of Maps, Charts, &c., which the Society stand in need of.

I remain, &c.,
PREMCHUND ROYCHUND;"

when it was unanimously resolved to accept Mr. Premchund Roychund's handsome donation, and to tender to that gentleman the Society's best thanks for the same. It was also carried by acclamation that he be nominated a Life Member of the Society.

By the kindness of Lieut. Morland, whose interesting paper they were intended to illustrate, the Society's tables were covered with rare specimens of Abyssinian art and industry, consisting of swords, shields, spears, hides, shells, ivory cups, specimens of textile fabrics, &c. &c.

The business of the evening having been brought to a conclusion, Lieutenant Morland, at the invitation of the Vice-President, read his Paper, "Gleanings as to the present state of Abyssinia, and a short account of a visit to the Hot Springs of Ailaat."

It is needless to add, that at the conclusion of his very interesting and valuable paper, Lieut. Morland sat down amidst the plaudits of the assembled members, and it was felt that the well-merited address from the Vice-President, conveying the thanks of the Society to that gentleman, was but the adequate expression of their deep interest in the various details of his communication; particularly in the narration of the late events connected with the imprisonment of our Consul by King Theodorus.

After a conversation of some length in which many of the Members took a part, the meeting was adjourned to Thursday, February 16th, 1865.

SESSION 1864-65.

SIXTH MEETING.—*February 16th*, 1865.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their New Rooms, on the basement story of the Town Hall, on Thursday the 16th February, at half past 4 P.M.

Present.—The Honorable W. E. Frere, C.S., F.R.G.S., *President,* in the Chair; Captain Thomas Black, *Vice-President;* Commander G. T. Robinson; J. Burgess, Esq., F.E.I.S.; G. C. M. Birdwood, Esq., M.D.; R. S. Sinclair, Esq., LL.D.; Rev. W. K. Fletcher, M.A.; Bháu Daji, Esq., G.G.M.C.; Major J. T. Annesley; Mirza Ali Jan, Esq.; J. Scorgie, Esq., F.C.S.; F. A. R. Morrison, Esq.; A. Taylor, Esq.; Rao Saheb Vishvanath N. Mandlik; M. Kane, Esq., M.D.; Brigadier General T. Tapp, C.B., *Members;* and D. J. Kennelly, Esq., *Corresponding F.R.G.S. Secretary.*

The Minutes of the last Meeting were read and confirmed.

Elections.—H. H. G. Tippett, Esq.; Lieutenant C. Swinhoe; Rev. Alexander Forbes, M.A.; R. H. Showell, Esq.; J. P. Leith, Esq.; and W. McClelland, Esq.

Members proposed.—Captain William Gore Jones, R.N.; Commander Alexander Buller, R.N.; Lord Walter T. Kerr, R.N.; Dr. A. G. Fraser; Heerjibhoy Merwanjee Wadia, Esq.; E. R. Whitley, Esq.; Jehangeer Goostadjee, Esq.; Rustomjee Heerjibhoy Wadia, Esq.; Captain Henry St. Clair Wilkins, R.E., Nowrojee Manickjee Wadia, Esq.; W. Wilkins, Esq.; Byramjee Nanabhoy Framjee, Esq.; and Limjee Manockjee, Esq.

Donations.—The undermentioned donations were laid before the Society, for which their best thanks were directed to be conveyed to the donors :—

1. Catalogue of the Library of the Royal Geographical Society, corrected to May 1851, with the Annual Supplement at the end.
2. Journal of the Royal Geographical Society of London. Vol. 33. By the Society.
3. Société Impériale Géographique de Russie. By the Society.
4. Livres d'Histoire Naturelle, Principalement en Entomologie.
5. La Republica de Venezia e la Persia, per Guglielmo Berchet.

Letters.—The following letters were read :—

1. From Dr. W. Niven, forwarding a cheque for Rs. (15) fifteen, being the amount of his Subscription to the Society. 2. From the Secretaries to the Royal Geographical Society of London, forwarding the 33rd vol. of the Society's Journal. 3. From T. D. Thomson, Esq., promising, in acknowledgment of the Secretary's letter of the

12th November last, to send a good many other Books, as soon as they come from the binder; and forwarding copy of the Royal Geographical Society's Catalogue, with the Annual Supplement at the end, and a MS. List of Books; and the following was addressed to the Honorable the President:—

"To the Honorable W. E. FRERE, F.R.G.S.,

President of the Bombay Geographical Society.

SIR,—Understanding from Mr. Kennelly that Volume VI. of the Society's Transactions is out of print, I have much pleasure in offering to the Society the sum of Rupees 1,000 (one thousand), for the purpose of printing a new edition of that volume.

I have the honour, &c.,
SORABJEE PESTONJEE FRAMJEE.

Bombay, 31st January 1865;"

when it was unanimously resolved to accept Mr. Sorabjee Pestonjee Framjee's handsome contribution, and to tender to that gentleman the Society's best thanks for the same.

At the suggestion of the Secretary it was resolved:—

"That the sum of money presented by Premchund Roychund, Esq., be deposited in the Financial Association of India and China Bank, until such time as the President, who has very kindly offered his services, can carry out the views of the Society."

"That the Secretary is authorised to carry out the printing of the 6th vol. so as to admit of the least delay."

The following extract from a letter from Lieutenant-Colonel R. L. Playfair, dated Zanzibar, 3rd October 1864, addressed to His Excellency Sir Bartle Frere, was, by his kind permission, laid before the Society by the Honorable the President:—

"Baron von des Dechen and party have arrived; he has *two* Steamers coming out in about a month, for the exploration of the rivers on this coast, and a large staff of scientific men, so he ought to do great things. It will be about six months, however, before he will be able to make a start.

Bishop Tozer has got into his new mission premises, and we have now service twice every Sunday in the little chapel which he has fitted up."

After which the meeting was adjourned to Thursday, March 16th, 1865.

Extraordinary Meeting.

An Extraordinary Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on the 9th March 1865, at 4·45 P.M.

Present.—Captain W. C. Barker, *Vice-President*, in the Chair; Captain Thomas Black, *Vice-President;* J. Burgess, Esq., F.E.I.S.; James Scorgie, Esq., F.C.S.; Lieutenant Henry Morland, F.R.A.S.; Mirza Ali Jan, Esq.; Commander G. T. Robinson; A. C. Gumpert, Esq.; The Rev. W. K. Fletcher, M.A.; Dr. Bhau Daji; Bhugwandass Poorshotumdass, Esq.; G. C. M. Birdwood, Esq., M.D.; Kulliandass Mohundass, Esq.; Rao Saheb Vishvanath N. Mandlik; Munmohundass Davidass, Esq.; A. Taylor, Esq.; Major J. T. Annesley; Dr. T. W. Ward, F.R.C.S.; J. P. Hughlings, Esq., B.A.; George Foggo, Esq.; J. Macfarlane, Esq.; E. W. Dawes, Esq.; James Taylor, Esq., *Members;* and D. J. Kennelly, Esq., *Corresponding F.R.G.S. Honorary Secretary*.

The objects for which the Meeting was convened having been briefly stated by the Secretary, the Chairman offered a few observations thereon, when the following Resolutions were passed:—

Proposed by the Rev. W. K. Fletcher, M.A., seconded by Dr. Bhau Daji, and carried unanimously:—

"That a Committee, composed of the following gentlemen—Captain Black, Dr. Bhau Daji, Dr. Birdwood, and the mover—be appointed to draw up an Address to the Honorable W. E. Frere, C.S., F.R.G.S., to be presented to him at the next ordinary Meeting, on which occasion he has signified his intention of resigning the office of President of this Society, owing to his departure from India."

Proposed by Dr. Birdwood, and seconded by A. C. Gumpert, Esq., and carried unanimously:—

"That a subscription be opened for the purpose of making a Portrait of the Honorable W. E. Frere, F.R.G.S., late President of the So-

ciety, to be hung in the Society's Rooms, and that a Committee composed of A. C. Gumpert, Esq., and the same Committee, be appointed to carry this Resolution out, and report progress at the ordinary Meeting of the Society to be held in April next."

The business of the evening was then closed.

SESSION 1864-65.

SEVENTH MEETING, *March 16th* 1865.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their New Rooms, on the basement story of the Town Hall, on Thursday the 16th March, at half-past 4 P.M.

Present.—The Honorable W. E. Frere, C.S., F.R.G.S., *President*, in the Chair; Captain Thomas Black, *Vice-President;* Captain W. C. Barker, *Vice-President;* Mirza Ali Jan, Esq.; M. Kane, Esq., M.D., M.A.; Maneckjee Cursetjee, Esq., F.R.G.S.; G. C. M. Birdwood, Esq., M.D.; Bhâu Daji, Esq., G.G.M.C.; Rev. W. K. Fletcher, M.A.; J. Burgess, Esq., F.E.I.S.; Munmohundass Davidass, Esq.; J. Scorgie, Esq., F.C.S.; Rev. A. Forbes; Dr. T. W. Ward, F.R.C.S.; G. W. Terry, Esq.; J. Sands, Esq.; Commander G. T. Robinson; J. Burns, Esq., C.E.; Major J. T. Annesley; and D. J. Kennelly, Esq., *Corresponding F.R.G.S. Secretary.*

The Minutes of the last Meeting were read and confirmed.

Elections.—Captain W. G. Jones, R.N.; Commander A. Buller, R.N.; Lord Walter T. Kerr, R.N.; Dr. A. G. Fraser; Heerjibhoy Merwanjee Wadia, Esq.; E. R. Whitley, Esq.; Jehangeer Goostadjee, Esq.; Rustomjee Heerjibhoy Wadia, Esq.; Captain H. St. Clair Wilkins, R.E.; Nowrojee Manockjee Wadia, Esq.; W. Wilkins, Esq.; Byramjee Nanabhoy Framjee, Esq.; and Limjee Manockjee, Esq.

Donations.—The undermentioned donations were laid on the table, for which the best thanks of the Society were directed to be conveyed to the donors:—

1. Copy of the Magnetical and Meteorological Observations made at the Bombay Observatory in 1863. By Government.

2. Copy of a Government Selection, No. 85, entitled "Papers relating to the Colonization of Mander Deo, and making it a Sanitary Station." By Government.

3. Proceedings of the Royal Institution of Great Britain, Vol. IV., Part III., No. 39, and Part IV., No. 40. By the Institution.

Letters.— The following letters were read :—

1. Memorandum from Messrs. Remington and Co., promising to pay the cheque for Rs. 6,000, but intimating that, for want of previous notice, they would consider the account at call, bearing 2 per cent. interest. 2. From Messrs. Smith, Elder, and Co., London, enclosing statement of their account made up to the end of last year, presenting an amount due to them of £4 16s. 6d., and requesting early remittance thereof. 3. From Lieutenant W. L. Searle, F.R.A.S., forwarding copy of the Magnetical and Meteorological Observations made at Bombay in 1863. 4. From Lieutenant Colonel M. K. Kennedy, Secretary to Government, forwarding copy of Government Selection No. 85. 5. From T. D. Thomson, Esq., London, informing, among other things, that he would send nearly every Book ordered in the Secretary's letter, by the Steamer that would leave on the 26th ultimo, and enclosing further List of Books. 6. From Messrs. Williams and Norgate, London, requesting to let them know who acts as the Society's Agent for the sale of its publications in London; and the following from Bhugwandass Purshotumdass, Esq., was read by the President :—

"To the Honorable W. E. Frere, F.R.G.S.,
President of the Bombay Geographical Society.

Sir,—I have much pleasure in forwarding for the acceptance of the Bombay Geographical Society the sum of Rs. 3,500, for the purpose of compiling and publishing a General Index to the Society's Transactions, to be combined in one volume with reprints of the Catalogues of its books, maps, charts, &c., &c., to be edited by D. J. Kennelly, Esq., the Honorary Secretary, who has very kindly consented to undertake the work.

I have, &c. &c.,
Bhugwandass Purshotumdass,
Member of the Bombay Geographical Society.

Bombay, 16th March 1865."

It was unanimously resolved to accept Mr. Bhugwandass Purshotumdass' handsome contribution, and to tender to that gentleman the Society's best thanks.

There being no other business before the Society, the President addressed the Meeting in the following terms:—

"GENTLEMEN,

This closes our proceedings for the day, and, as you probably are well aware, the proceedings of the last Monthly Meeting at which I shall preside. It becomes my duty now to resign into your hands the honour you bestowed upon me three years ago. If it is possible to feel happiness when resigning such an honour, and when taking leave of the Society, I do feel it in the thought that I leave you in a very prosperous condition. You now number 148 members, of whom 42 are natives, and to those native gentlemen we are indebted for allowing the Society to partake of that unprecedented wealth which Bombay now enjoys. Mr. Cursetjee Furdoonjee gave us Rs. 1,500; Mr. Premchund Roychund, Rs. 5,000; Mr. Sorabjee Pestonjee Framjee, Rs. 1,000; and to-day we have received Rs. 3,500 from Mr. Bhugwandass Purshotumdass. These gifts have all, I think, been given for particular objects; but if the prosperity India now enjoys is continued to it, many will, I hope, with the same liberality be presented to the Society for general objects, and by funding it we shall be able at some future day to pay the expenses of expeditions to explore and open out countries with which at present we are but imperfectly acquainted. I will detain you no longer, gentlemen; but thanking you, as I do cordially, for the honour you did me in electing me President of your Society, and most cordially for the kindness and consideration you have always shown me, I beg you will accept my resignation of this chair."

Mr. MANOCKJEE CURSETJEE said:—Sir,—Finding myself the senior member of the Society present, and I may say, the oldest member, whose name now stands first on its roll, I rise to thank the President, in the name of all the members present, for the address he has just given. I feel sure that I speak the sentiments of those present, when I assure you, Sir, that we have heard of your resignation with great regret. That regret would have been still greater if they had not been aware that your resignation has been caused by your desire, after a long and useful public career in this Presidency, to return to your native

country, where we all trust you will long continue in the enjoyment of health, happiness, and a career of additional honour and usefulness. The Society cannot but feel deeply thankful to you for the prosperity it has attained under your care and superintendence, and it must be gratifying to you to leave it in such a flourishing condition. It has given me great pleasure to hear you speak so well of the native members of this Society. You, Sir, might remember that it was more than a quarter of a century ago, that the portals of the literary and scientific societies were, in my humble instance, for the first time thrown open to my countrymen. It was not without hard-fought battles and strong opposition from some of the illiberal Europeans that such a privilege was gained for my countrymen. Those who were opposed to the admission of the natives of India into these societies, brought forward objections which cannot but appear to you now to be frivolous and groundless. Among other objections raised by some of them, it was alleged that the natives would disturb the harmony of our meetings, and that they would soil the carpet with the refuse of their *pan sooparee*. I wish those opposers were now present to prove themselves false prophets. You yourself, and others to whom I would appeal, can testify how well our native associates have conducted themselves, and how useful they have been in advancing the interests of this and other societies. I again thank you, in the name of the Society, for the able manner in which you have acquitted yourself, while filling the responsible post of the President of this Society.

Mr. FRERE then said :—It has, I believe, been usual in this Society for the President to suggest to the Society a fit and proper person as his successor. During the existence of the Indian Navy, this was no difficult task. The Commodore commanding that Navy was generally, from his position, the very fittest person you could select. I have no wish in any way to dictate to the Society, nor to ask them to come to an early and immature decision ; but as you are not likely to have been taken by surprise by my resignation, you have probably already thought of a successor for me. If you have not, I would suggest a person who, from his constant attendance at our meetings, and the official situation he holds, is in my opinion the fittest person you could obtain. I refer to Captain Black. His appointment in connection with the P. & O. Company's service, gives him facilities for obtaining information in physical and general geography which are within the

reach of no others. I would, therefore, unless some member is prepared to suggest a better man, propose that Captain Black should be elected your President.

Mr. MANOCKJEE CURSETJEE said it was a happy suggestion that fell from their retiring President, and he would propose that Captain Black be elected President of the Society by acclamation. The officers of the old Bombay Marine, and the late Indian Navy had done much for the advancement of the objects of the Geographical Society; but that service had now ceased to exist, and the growing importance of the P. & O. Company's service, at the head of which Captain Black is at present in Bombay, would no doubt be the means of conferring equally great, if not greater, benefits on the Society.

Captain BLACK having been unanimously elected President, thanked the Society for the honour conferred upon him, and the meeting adjourned.

Extraordinary Meeting.

An Extraordinary Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Tuesday the 4th April 1865, at 4-15 P.M., for the purpose of presenting the address voted by the Society to their late President, the Honorable W. E. FRERE, F.R.G.S. There were present:—

Patron.—His Excellency the Honorable Sir H. B. E. FRERE, K.C.B.

Ex-President.—The Honorable W. E. Frere, C.S., F.R.G.S.

President.—Captain Thomas Black, in the Chair.

Vice-President.—Captain W. C. Barker.

Members.—G. C. M. Birdwood, Esq., M.D.; Venayekrow Wasoodeojee, Esq.; Sorabjee Framjee, Esq.; Mirza Ali Jan, Esq.; the Rev. W. K. Fletcher, M.A.; Dhunjeebhoy Framjee, Esq.; Munmohundass Davidass, Esq.; R. S. Sinclair, Esq., LL.D.; Manockjee Cursetjee, Esq., F.R.G.S.; J. Burgess, Esq., F.E.I.S.; Bhugwandass Purshotumdass, Esq.; J. Firth, Esq.; Commander G. T. Robinson; Dr. Bhau Daji; Burjorjee Sorabjee Ashburner, Esq.; Homjee Cursetjee Dady, Esq.; Colonel J. Jones, R.E.; E. R. Whitley, Esq.; Virjeewundass Madhowdass, Esq.; Cursetjee Furdoonjee Paruck,

Esq.; Sir Jamsetjee Jejeebhoy, Bart., F.R.G.S.; G. W. Terry, Esq.; Cowasjee Manockjee Limjee, Esq.; Byramjee Nanabhoy Framjee, Esq.; A. Taylor, Esq.; Surgeon Major S. M. Pelly, F.R.C.S.; Surgeon Major T. W. Ward, F.R.C.S.; E. S. Dawes, Esq.; Lieutenant W. L. Searle, F.R.A.S.; Lieutenant H. Burn; Captain A. Phillips; Sorabjee Jamsetjee Jejeebhoy, Esq.; Atmaram Pandurang, Esq.; Lieutenant Henry Morland, F.R.A.S.; J. Scorgie, Esq., F.C.S.; Major J. T. Annesley; T. Diver, Esq., M.D.; and D. J. Kennelly, Esq., *Corresponding F.R.G.S. Honorary Secretary.*

Visitors.—Lord John Hay; Captain Sherard Osborn, C.B., R.N., F.R.G.S.; Major G. Clerk, Colonel Taylor, C.B.; Arthur Grey, Esq., C.S.; George Taylor, Esq.; and General Lucas.

The Secretary having read an extract from the minutes of the proceedings of an extraordinary meeting held on the 9th ultimo, relative to the preparation of an address for presentation to the President on his approaching departure from India, Captain Black, the President, then rose and said:—The object of this special meeting, as you have just heard, is to do honour to Mr. Frere, who to our regret has lately retired from the office of our President, and who is about to quit the shores of India, probably for ever, taking with him the good-will and hearty wishes for his welfare of all who personally know him. I could enlarge if it were meet at this opportunity, on his amiable personal qualities, his wide-spread hospitality; but I think it would be unfitting to do so on an occasion like the present. I will therefore confine myself to remarking briefly on his connection with this Society. For upwards of 20 years has he been a member of it—five years of this time in the office of Vice-president and for the last three years in that of President. During that time we have been indebted to him for procuring for the Society many papers which have been read at our monthly meetings with much interest and attention. Many communications also, of interest and importance in themselves, though not sufficiently long to warrant their being styled papers, have been sent to us mainly through his influence, exerted not only in his capacity of Vice-President and President, but of late years as a member of the Government. Mr. Frere has also shown his strong interest in the Society by his frequent attendance at our meetings, often, I doubt not, at personal inconvenience to himself, when other business pressed on his time and attention. These matters, however, are embodied in the

address, and beside them the fact that we have asked Mr. Frere to sit for his portrait, to be hung along with those of former Presidents in the Society's room. This portrait, the Committee, in communication with Mr. Frere himself, have thought it better should be painted in London, where he will probably have plenty of time to spare for the purpose, and where we are likely to obtain a memento worthy of the man. Mr. Frere is about to proceed to England by a rather circuitous route, and to become acquainted personally with countries of which he and perhaps many others of us have only read, and in the name of the Society I would ask him kindly to communicate with us should he see any object worthy of remark in anything that he may consider likely to interest us as a Geographical Society; in fact to give us the result of his observations as an honorary member, in which capacity, I am happy to say, he has consented to continue his connection with us. I will conclude by saying that it is a matter of great gratification to myself personally that, on my first taking the Chair as president of this Society, I should have to assist in doing honours to my predecessor, and it is my anxious wish that the dignity and usefulness of the office so worthily maintained by him may not suffer at my hands. I once more call on the Secretary to read the address.

Mr. D. J. Kennelly, the Secretary of the Society, then read the address, which was as follows :—

Sir,— For more than twenty years you have been associated with us in promoting our pursuit of Geographical Science; and for almost half that number of years as Vice-President and President you have governed our deliberations.

With no ordinary feelings of regret, we learn that you are about to separate yourself from India, and we now receive your resignation of office with a keen sense of the loss which this Society thereby sustains.

The easy access and calm attention which you have, at all times, given to the members of this Society, when seeking your counsel to advance its objects; your influence as a member of Government as well in transmitting papers of much interest and value on geographical subjects as in aiding more directly our scientific pursuits; your characteristic perseverance and sound judgment in forwarding the aim and object of this Society by unremitting attention to the business

brought before it—these, Sir, are some of your many claims upon our esteem and regard. To these acts, this Society owes much of the increasing interest now manifested in its transactions, much of the enlargement of its operations, to which the noble gifts of Premchund Roychund, Cursetjee Furdoonjee Paruck, Sorabjee Pestonjee Framjee, and Bhugwandass Purshotumdass, our munificent native Associates, have so largely contributed.

We therefore desire, Sir, to embody in some desirable form, our feeling towards you, and with your concurrence, would add your portrait to those of our former Presidents and benefactors. We respectfully request this favour from you, that on your return to your native land, you will sit for your portrait to any distinguished artist whom you may select, and whom we will commission to produce a work, which we trust will be worthy of our object, and of your merit as our Associate and President.

For though absent in person from us, we are assured you will, every where on the earth's surface, be our fellow-worker, and we rejoice in believing that you will permit us to enrol your name as an Honorary Member of our Society.

May you, Sir, on leaving our shores be prospered with every happiness which in this life is vouchsafed to man, and for years to come, enjoy, in a green old age, the well-earned honours of a youth and manhood spent in the pursuit of Science and the service of your country, is the prayer of

YOUR BROTHER ASSOCIATES."

The Honorable Mr. FRERE, in reply said,—I thank you most cordially for your kind and feeling address. It is a great gratification to me to know that you so kindly appreciate my services;—more by what it was my sincere wish they should have been than what I fear they were. I am especially sensible of your kindness, for I fear there are some among you who have doubts regarding my conduct in having suggested our removal into this room. I grant you the room we had upstairs was preferable, but then it was the property of others, and I knew that they must soon put forth their claims to it, and whenever they did, that they were not to be refused. I therefore took the opportunity, when this room was available, to suggest that it should be

given to us rather than wait in the short-sighted hope that we might retain a smaller but more cheerful room a short time longer. You are now in possession of a room placed at your disposal by Government, to which no other body has any claim. It is not handsome, but it is your own; and I feel confident that whenever you do leave it, it will be for something better, instead of as I always dreaded when we were in the other room that we might be ejected without any provision being made for us. I have dwelt upon this subject because having been at the time President of both the Societies, both the one that gained the room, and the other that lost it, and having had the recovery of that room enumerated as one of the benefits I obtained for that Society, I might have been thought to have favoured the one at the expense of the other; but I am proud to think that I receive honour from both Societies, and that even those who may not feel inclined to thank me for what I then did are willing to give me credit for having generally done my best. But my own exertions in any direction would have availed but little had I not been supported, as I always have been, by the Vice-Presidents, Committee, Secretary, and Members generally. It is to the handsome donations to which you refer that the material prosperity of the Society is due, and without your support in managing the Society I must have failed. Long may that prosperity continue to Bombay which has enabled her princely merchants to do so much for the cause of science, and may they live to reap the fruits of their generosity in seeing the advancement of their countrymen, and the spread of geographical and every other science. It has been my good fortune to have been President of your Society in these days of its prosperity, and I fear that more merit for that prosperity is due to others than to me. I cannot say more than that I am proud of, and most readily grant the request you make me, of sitting for my portrait, and being enrolled among your honorary members. I only wish I was more worthy of the honour you do me; to keep my name among your members is what I would myself have sought; but to have my portrait beside Captain Ross, Sir C. Malcolm, and Sir A. Burnes, I could never have aspired to; your partial favour alone could have suggested it. If it shall happen that I am able to make the journey that I contemplate, instead of going directly home, and if, in the course of it I meet with anything that will interest the Society, I shall be happy to communicate it. And now, thanking you most cordially for your

kind wishes for my happiness, and with every hope and wish that the same success may attend the proceedings of the Society, and the same cordiality exist between the President and the Members as during the ten years that I have had part in the management of the Society, I bid you all collectively and individually farewell, and may every happiness compatible with your good attend you all.

A vote of thanks to the Governor for his presence terminated the proceedings.

SESSION 1864-65.

Eighth Meeting.—*April 20th* 1865.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms on the basement story of the Town Hall, on Thursday the 20th April, at half-past 4 P.M.

Present.—The Rev. W. K. Fletcher, M.A., in the Chair; Captain A. Phillips; F. A. R. Morrison, Esq.; A. Taylor, Esq.; R. S. Sinclair, Esq., LL.D.; Lieutenant W. P. Arnot; Lieutenant Henry Morland, F.R.A.S.; J. Firth, Esq.; *Members;* and D. J. Kennelly, Esq., *Corresponding F.R.G.S., Honorary Secretary.*

The Minutes of the last meeting were read and confirmed.

Elections.—J. Hurst, Esq.; Mathew Henry Scott, Esq., C. S.; Captain Sherard Osborn, C.B., R.N.; Dheerujram Dulputram, Esq., G.G.M.C.; and Lieutenant Colonel Lewis Pelly.

Captain Sherard Osborn, C.B., and the Rev. W. K. Fletcher, M.A., were elected *Vice-Presidents.*

A. C. Gumpert, Esq.; Lieutenant Henry Morland, F.R.A.S.; and Brigadier General T. Tapp, C.B., were elected *Members of the Committee.*

Donations.—The undermentioned donations were placed on the table, for which the best thanks of the Society were directed to be conveyed to the donors :—

1. Erster Jahresbricht des Vereins zur erdkunde in Dresden.
2. Proceedings of the Royal Geographical Society. Vol IX., No. 1. By the Society.

3. Monthly List of Valuable, Rare, and Curious Books, in all Departments of Literature. By B. Quaritch, Esq.
4. Report of the Committee of Inquiry on the Colaba Observatory (3 copies). By Government.

Letters.—The following letters were read:—

1. From A. C. Gumpert, Esq., suggesting to the Society to take in a German Geographical Journal, by Dr. A. Petermann. 2. From T. D. Thomson, Esq., London, enclosing a list of the Books (part of Mr. Cursetjee Furdoonjee's donation), and advising of his having despatched those books per last steamer. 3. From the Secretary to Government, forwarding copy of a letter from the Political Agent in Kattywar, reporting on the subject of a slight shock of Earthquake, which was felt all over the central parts of Kattywar. 4. From Mathew Henry Scott, Esq., C.S., requesting to be admitted a member of the Society. 5. From the Secretary to Government, forwarding three copies of the Government Resolution directing that the Report of the Committee of Inquiry on the Colaba Observatory be distributed as therein specified.

The following Paper, contributed by Government, was then read by the Secretary:—

"A Memoir to accompany the Map of the Survey of a part of Mesopotamia, from Hillah to the Ruins of Niffer, surveyed in the autumn of 1861 and the spring of 1862. By Lieutenant W. Collingwood, I.N., then Commanding Her Majesty's Steamer "Comet," and Surveyor in Mesopotamia."

The President and some of the Members present having offered a few observations on the subject of the Paper, the best thanks of the Society were voted to His Excellency the Governor in Council for this interesting communication, and the meeting adjourned to Thursday, May 18th, 1865.

SESSION 1864-65.

Annual Meeting, *May 18th* 1865.

The Annual General Meeting of the Bombay Geographical Society was held in their Rooms, Town-Hall, on Thursday the 18th May, at half-past 4 P.M.

Present.—Captain W. C. Barker, *Vice-President,* in the chair; Commander G. T. Robinson; Lieutenant Henry Morland, F.R.A.S.; Dheerujram Dulputram, Esq. G.G.M.C., *Members;* and D. J. Kennelly, Esq., *Corresponding F.R.G.S., Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Donations.—The undermentioned donations were placed on the table, for which the best thanks of the Society were requested to be conveyed to the donors:—

1. Monthly List of Valuable, Rare, and Curious Books in all Departments of Literature, for March. By the Publishers.
2. Proceedings of the Royal Geographical Society of London for February and March. By the Society.
3. Proceedings of the Imperial Geographical Society of Russia, for December 1864 and January 1865. By the Society.
4. Annual Report of the Royal University of Frederick for the year 1862. By the University.
5. Om Sneebræen Folgefon af S. A. Sexe. By the Author.
6. Om de Geologiske Forhold Paa Kyststrækningen af Nordre Bergenhus Amt. By the Author.
7. Untersuchungen über den Magnetismus der Erde, with Map. By Prof. Christoph Hansteen.
8. Resultate Magnetischer, Astronomischer, und Meteorologischer Beobachtungen. 1828—1830. By Prof. Christoph Hansteen und Lieutenant Due.
9. Meteorologische Beobachtungen. Aufgezeichnet auf Christianias Observatorium. 1848—1855. Christiania.
10. Proceedings of the Geographical Society of Paris, from July to December 1864. By the Society.
11. Report on the Municipality of Bombay, by Surgeon Major Pelly, F.R.C.S. By Government.

Letters.—The following letters were read—

1. From M. H. Scott, Esq., C.S., acknowledging with thanks his election as a Member of the Society. 2. From Captain Sherard Osborn, C.B., R.N., acknowledging with thanks his nomination as Member and Vice-President of the Society. 3. From T. D. Thomson,

Esq., London, acknowledging the Secretary's letter of the 13th March last, together with Vol. VI. of the Society's Transactions, and promising to furnish information as to the probable cost of the Index for the 17 volumes of the Society's Transactions.

The business of the Monthly Meeting having been closed, the Minutes of the last Annual Meeting were read.

The Voting Lists having been examined, the following, in order of votes, were declared to be the Office-bearers for the ensuing year :—

Vice-Presidents. 1. Captain W. C. Barker. 2. Captain Sherard Osborn, C.B., R.N. 3. The Rev. W. K. Fletcher, M.A.

Resident Members of the Committee. 1. Bhau Daji, Esq., G.G.M.C. 2. G. C. M. Birdwood, Esq., M.D. 3. Sir Jamsetjee Jejeebhoy, Bart., F.R.G.S. 4. Commander G. T. Robinson. 5. Surgeon Major A. H. Leith. 6. R. S. Sinclair, Esq., LL.D. 7. R. Haines, Esq., M.B. 8. Lieut. Henry Morland, F.R.A.S. 9. The Honorable Jugonnathjee Sunkersett. 10. Major General T. Tapp, C.B., A.D.C. to the Queen. 11. A. C. Gumpert, Esq. 12. Prof. J. P. Hughlings, B.A.

Non-Resident Members.—1. Colonel A. B. Kemball C.B., F.R.G.S. 2. General G. LeGrand Jacob, C.B. 3. Sir Alexander Grant, Bart., M.A. 4. Dadabhai Naoroji, Esq. 5. T. C. Hope, Esq., C. S. 6. Surgeon Major H. D. Glasse. 7. J. Burgess, Esq., F.E.I.S. 8. Dr. J. H. Sylvester, F.G.S.

Sub-Committee of Correspondence.—1. Dr. Bhau Daji. 2. G.C.M. Birdwood, Esq., M.D. 3. Sir Jamsetjee Jeejeebhoy, Bart, F.R.G.S. 4. R. Haines, Esq., M.B. 5. The Honorable Jugonnathjee Sunkersett.

Sub-Committee of Finance.—Commander G. T. Robinson. 2. Surgeon Major A. H. Leith. 3. R. S. Sinclair, Esq., LL.D. 4. Lieut. Henry Morland, F.R.A.S. 5. General Thomas Tapp, C.B. 6. A. C. Gumpert, Esq. 7. Prof. J. P. Hughlings, B.A.

Auditors.—A. C. Gumpert, Esq., and Prof. J. P. Hughlings, B.A., were appointed Joint Auditors of the Society's Cash Accounts of the past year.

The Secretary then proceeded to lay before the Society the following brief Summary of the Progress of the last Session :—

" During the Session just closed, the Society held eight ordinary and two extraordinary Meetings.

Although the number of Papers read during this Session was not, from various causes, so great as during the two preceding ones, yet it may be recorded with pleasure that they were not wanting in interest or scientific value. Of the five Papers read, three were contributed by Government, and two by the authors, and were the following :—

1. Visit to the Wanica country in the vicinity of Mombassa, and the progress made by the Christian Missionaries at that place. By Lieut. Colonel R. L. Playfair, H. M.'s Consul and Political Resident at Zanzibar; contributed by Government. Read at the first Meeting, September 15th, 1864.
2. Notes on the recent Earthquake in the North-western part of the Bombay Presidency. By D. J. Kennelly, Esq., Corresponding F.R.G.S. Read at the Second Meeting, 20th October 1864.
3. Report on Dhur Yaroo, in the Shikarpoor Collectorate. By Assistant Surgeon J. Lalor, B.A.; contributed by Government. Read at the fourth Meeting, December 15th, 1864.
4. Gleanings as to the present state of Abyssinia, and a short account of a visit to the Hot Springs of "Ailáat." By Lieut. Henry Morland, F.R.A.S. Read at the fifth Meeting, January 19th, 1865.
5. Memoir to accompany the Map of the Survey of a part of Mesopotamia, from Hillah to the Ruins of Niffer, surveyed in the autumn of 1861 and the spring of 1862. By Lieut. W. Collingwood, I. N., then Commanding H. M.'s Steamer "Comet," and Surveyor in Mesopotamia; contributed by Government. Read at the eight Meeting, April 20th, 1865.

The Members numbered on the Society's List at the last Annual Meeting were 105; and the number admitted during this Session is 52 (of whom 11 are Natives)—by far the largest number ever admitted during any one of the previous Sessions. But against this the Society has lost five Members, of whom three have been removed, viz.—

By Retirement from India.—1. The Honorable W. E. Frere,

F.R.G.S., late President and now Honorary Member of the Society. 2. Captain H. G. Raverty, late of the Bombay Army. 3. Commander W. P. Mitcheson, late I.N., and

By Death (2)—1. J. M. Erskine Esq., C. S. 2. W. Tracy, Esq.

So that the Society has on its Lists to-day 152 Members.

The Honorable Mr. Frere entered the Society in 1845, was elected Vice-President in 1857, and President in 1862. But owing to his final retirement from India, he was obliged to resign the office of the President of this Society. In him we have lost one of our oldest active members, and one who, for his regular attendance at our meetings, his moral as well as high official influence, and his zealous endeavours for the promotion of the Society's objects, has been deservedly held in very high esteem, and has justly been considered one of the main causes of the present prosperous condition to which the Society has attained. In appreciation of all these valuable services the Society presented to him an Address at an Extraordinary Meeting held on the 4th April 1865, and a Subscription List has been opened with a view to have his Portrait in our Library Rooms. Mr. Frere was also elected an honorary member of the Society.

From Captain H. G. Raverty, who entered the Society in 1850, we have the following valuable paper:—

"Diary of a March with the 3rd Regiment N. I., from Roree to Mooltan and Peshawur."

Messrs. Erskine and Tracey, whose loss it is our painful duty to record to-day, had continued worthy members during their connection with the Society.

It is most gratifying to observe that the last Session has not only surpassed all its predecessors by greatly enlarging the Society's List of Members, but also by adding materially to its Funds. (*Vide* Appendix A, which shows that the balance in the Society's favour was, on the 1st May 1864, Rs. 2,541-14-3, and 1st May 1865, Rs. 12,633-2-6.)

Among the many donations received during the past year, the following munificent gifts occupy a prominent place:—

1. From Premchund Roychund, Esq., as a New Year's Gift, for purchasing Maps, Charts, &c. &c. ..... Rs. 5,000
2. From Sorabjee Pestonjee Framjee, Esq., for printing a new edition of Vol. VI. of the Society's Transactions ..... „ 1,000
3. From Bhugwandass Purshotumdass, Esq., for compiling and publishing a General Index to the Society's Transactions, to be combined in one Volume, with reprints of the Catalogues of its Books, Maps, Charts, &c. &c. ..... „ 3,500

Total.... Rs. 9,500

The obligations of the Society for these very liberal contributions were conveyed with thanks to their respective contributors, and the first gentleman on the list of donors was unanimously nominated a Life Member of the Society.

Whether we look to the amount of each donation or to the purpose for which it has been offered, the good sense and disinterested zeal of the donors, for the well-being of this Institution, are conspicuous throughout; and we are now happily placed in a position to hope that when the wishes of the several donors shall have been accomplished, the Library will afford far more facilities to further the objects of Geographical Science than it does at the present day. Appendix B shows the list of Books that have yet come out of the Cursetjee Furdoonjee Paruck Presentation."

The report submitted by the Secretary having been considered in every way most satisfactory, it was unanimously resolved to adopt the same, and the warmest thanks of the Society were voted to the President, to the Secretary, and to the Office-bearers of the past year.

Mr. Kennelly then intimated his intention of leaving India for a short time, and suggested that Lieut. Henry Morland, F.R.A.S., should be appointed his successor during his absence. He also intimated that he proposed undertaking several duties connected with the Society during his stay in England, with reference to giving effect to the spirit of the several donations which had been made to the Society during the past year.

Lieut. Morland was then duly elected Honorary Secretary to the Society, *pro tem.*

Lieut. Morland, on accepting the appointment, remarked that he considered that the zeal and intention of Mr. Kennelly to devote a portion of his limited stay in England, to the benefit of the Society, and in so worthy a cause as he had intimated, called for the best thanks of the Society.

Commander Robinson proposed a vote of thanks to the able Secretary, Mr. D. J. Kennelly, not for what he proposed to do for the Society while in England, but for his efforts in its behalf, as shown in the very large increase in the number of members, and also for the very liberal donations that had been made by the more opulent of the members. The Society owed much to Mr. Kennelly, and the least they could do on his departure, was to record a vote of thanks for his unremitting labours as Secretary.

A unanimous vote of thanks to Mr. Kennelly, the Secretary, was then recorded, and the meeting adjourned to Thursday, September 21st 1865.

SESSION 1865-66.

First Meeting, *September 21st* 1865.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 21st September, at half-past 4 P.M.

Present.—The Rev. W. K. Fletcher, M.A., *Vice-President*, in the Chair; Professor J. P. Hughlings, B.A.; Professor F. J. Candy, M.A.; Brigadier General T. Tapp, C.B.; G. C. M. Birdwood, Esq., M.D.; R. S. Sinclair, Esq., LL.D.; Captain A. Phillips; Lieut. W. P. Arnot; A. C. Gumpert, Esq.; J. Scorgie, Esq., F.C.S.; F. A. R. Morrison, Esq.; Venayekrao Jugonnathjee, Esq.; W. Wilkins, Esq.; K. R. Kama, Esq.; Atmaram Pandoorung, Esq., G.G.M.C.; Dheerujram Dulputram, Esq., G.G.M.C.; J. Firth, Esq., *Members*; and Lieut. Henry Morland, F.R.A.S., *Acting Honorary Secretary*.

The Minutes of the last Meeting were read and confirmed.

Members proposed.—J. D. Macdonald, Esq.; Lieut.-Colonel J. S. Gell; Captain G. F. Henry; H. Warner, Esq.; and E. Dawes, Esq.

Donations.—The undermentioned donations were placed on the table, for which the best thanks of the Society were directed to be conveyed to the donors:—

1. Report on the question of Irrigation in the Yerla Valley. Contributed by Government.
2. Proceedings of the Tenth Meeting, April 10th, 1865, of the Royal Geographical Society. By the Society.
3. Memoirs of the Geological Survey of India, &c., in 4 Parts. By Thomas Oldham, Esq., LL.D. Contributed by the Government of India.
4. Report of the Bombay Chamber of Commerce for the year 1863-64. By the Chamber of Commerce.
5. Monthly Lists of Valuable, Rare, and Curious Books, for May and August, 1865, London. By the Publishers.
6. Report on Vaccination throughout the Bombay Presidency and Sind for the year 1864. By the Principal Inspector General, Medical Department.
7. Notes on certain questions relative to the interior of Arabia; discussed before the Royal Geographical Society on the 22nd February and 14th March 1864, and published in their issue of 28th April 1864. By Lieutenant Colonel Lewis Pelly Political Resident in the Persian Gulf. Contributed by Government.
8. Report on the Revision of Land Assessment in the Oomergaum Petta of the Sunjan Talooka, Tanna Collectorate. By Government.
9. Papers relating to Pearl Fisheries in Ceylon, &c. By Government.
10. Proceedings of the Royal Society, Vol. XIII. Nos. 58—69. By the Society.
11. Results of the Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, 1862. By the Royal Society.

12. Annual Reports of the Board of Regents on the Smithsonian Institution, for the years 1861 and 1862. By the Institution.

13. Astronomical and Meteorological Observations made at the United States Naval Observatory, during the year 1862. By the Superintendent of the Observatory.

14. Reports of the Superintendent of the United States Coast Survey, for 1859, 1860, and 1861.

15. Papers relating to the System of Periodical Measurement of Irrigated Lands, and the Distribution and Economy of Water. By Government.

16. Morgan's British Trade Journal and Export Price Current. By the Publishers.

17. Journal of the Geographical Society of Paris, from January to June 1863. By the Society.

18. Proceedings of the Royal Geographical Society of London, Vol. IX. Nos. II. III. IV. and V. By the Society.

19. Journal of the Royal Asiatic Society of Great Britain and Ireland, Vol. I. Part 2. By the Society.

20. Journal of the Royal Geographical Society of London, Volume XXXIV. By the Society.

21. Remarks on Korea, by Allen Young, Esq., R.N.R. Presented by Captain Sherard Osborn, C.B., R.N.

Letters.—The following letters were read :—

1.—From M. Kane, Esq., M.D., requesting to withdraw his name from the Society. 2. From Lieut.-Colonel M. K. Kennedy, R.E., Secretary to Government, P. W. D., forwarding copy of "Report on the question of Irrigation in the Yerla Valley. 3. From Captain Barker and the Rev. W. K. Fletcher, M.A., acknowledging with thanks Secretary's letters announcing their re-election as Vice-Presidents of the Society. 4. From the Secretary to Government, Political Department, forwarding copy of a "Note on certain questions relative to the interior of Arabia, discussed before the Royal Geographical Society," by Colonel Pelly, H. M.'s Political Resident in the Persian Gulf. 5. From ditto, forwarding copy of a Report and of its

accompaniments, from the Political Resident in the Persian Gulf, descriptive of a "Visit paid by him to the Plateau of Goosakan and its adjacent Hills." 6. From Sir Jamsetjee Jejeebhoy, Bart., and Professor J. P. Hughlings, acknowledging with thanks the Secretary's letters announcing their election as members of the Committee. 7. From C. Gonne, Esq., Secretary to Government, intimating the compliance of Government with the Secretary's request, conveyed in his letter No. 79, of the 22nd May last, to have a copy of the "Correspondence relating to Captain G. F. Sadlier's Political Mission to H. E. Ibrahim Pacha," and asking to send a Clerk to the Secretariat to transcribe the same. 8. From W. H. Miller, Esq., Foreign Secretary to the Royal Society of London, expressing the Society's thanks for Vol. XVI. of the Bombay Geographical Society's Transactions. 9. Printed Copy of Government Resolution No. 1276, of the 12th July 1865, directing the Superintendent of Stationery to despatch a case of Books, received per ship "Agamemnon," to the Society. 10. From the Superintendent of Stationery forwarding, with reference to the above Resolution, a case, containing numbers of the Royal Society's Proceedings, &c., and requesting a receipt for the same. 11. From Secretary to Government, P. W. D., forwarding Selection No. 89 from the Records of Government, New Series. 12. From Colonel Rigby, Bombay Staff Corps, London, with enclosures, soliciting, at the request of a Committee of Fellows of the Royal Geographical Society of London, for the "Speke Memorial Fund," the kind offices of this Society to obtain subscriptions from their members towards the said object, &c. &c. 13. From Captain Sherard Osborn, C.B., R.N., presenting copies (2) of "Remarks on Korea," by Allen Young, Esq., R.N.R. 14. From Captain W. C. Barker, V. P. (with enclosure from Mr. Martin Wood), on the subject of the presentation of an address to Dr. Livingstone.

Resolutions.—The following Resolutions passed at the Meeting of the Committee, were then read by the Acting Secretary :—

1. That a Sub-Committee be appointed to draw up an address to Dr. Livingstone, at present in Bombay, composed as under :—

The Rev. W. K. Fletcher, M.A., *Vice President;* J. P. Hughlings, Esq., B.A.; G. C. M. Birdwood, Esq., M. D.; and the Secretary.

2. That Dr. Livingstone be written to with a view of ascertaining when it will be convenient to him to receive the address, and a special meeting be summoned for presenting it.
3. That Captain Sherard Osborn, C.B., R.N., be requested to present the address in the name of the Society.
4. That Mr. Cowasjee Jehangirjee Readymoney be elected a member of the Managing Committee, in the room of the Honorable Jugonnathjee Sunkersett, deceased.
5. That an extra Clerk be entertained as a temporary measure, to complete the Correspondence relating to Captain G. F. Sadlier's Political Mission to H. E. Ibrahim Pacha.
6. That a subscription list be opened in aid of the "Speke Memorial Fund;" the subscription not to exceed one Gold Mohur each.

Cowasjee Jehangirjee Readymoney, Esq., was accordingly elected a Resident Member of the Committee.

In confirming the above Resolutions, the Chairman explained, as regarded the Speke Memorial Fund, that the reason for fixing so small a sum was to induce more to contribute. He believed the Committee in England had already ample funds, but it was desired to make the Memorial as universal as possible.

Paper.—The following Paper, which was contributed by Government, was then read by the Secretary :—

"Remarks by Lieut. Colonel Lewis Pelly on his Tour to the Plateau of Goosakan and its adjacent Hills, during September 1864."

The best thanks of the Society were voted to His Excellency the Governor in Council for this valuable communication, and the Meeting adjourned to Thursday, October 19th, 1865.

SESSION 1865-66.

Second Meeting, *October 19th*, 1865.

The Ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, in the Town Hall, on Thursday, the 19th October, at half-past 4 P.M.

Present.—Captain W. C. Barker, *Vice-President*, in the chair; J. Scorgie, Esq., F.C.S.; Lieut. W. P. Arnot; Captain A. Phillips; K. R. Kama, Esq.; Dheerujram Dulputram, Esq., *Members;* and Lieut. Henry Morland, F.R.A.S., *Acting Secretary*.

The Minutes of the last Meeting were read and confirmed.

Elections.—J. D. Macdonald, Esq.; H. Warner, Esq., I. N.; E. Dawes, Esq.; Lieut. Colonel J. S. Gell; and Captain G. F. Henry.

Donations.—The following donations were laid on the table, for which the best thanks of the Society were requested to be conveyed to the donors:—

1. Arctic Journal, by Captain Sherard Osborn, C.B., R.N. Presented by the Author.
2. Discovery of a North-west Passage, by H. M. S. "Investigator," Captain R. M'Clure, during the years 1850—1854. Edited, and presented by Captain S. Osborn, C.B., R.N.
3. Oriental Budget for India, Australia, China, and the Colonies, for September 1865. By the Publishers.

Letters.—The following letters were read:—

1. From Messrs. Remington & Co., enclosing copy of the Society's Account current, made up to the 31st July last. 2. From Messrs. Smith, Elder, & Co., London, forwarding statement of their Account with the Society, made up to the end of the past half year, and requesting an early remittance. 3. From the Manager of the Financial Association of India and China, Limited, enclosing a new deposit receipt for Rs. 6,270, being amount of principal with accumulated interest for six months, at 7 per cent. per annum. 4. From Captain Sherard Osborn, C.B., R.N., forwarding, for the Library of the Society, two Books, edited by him. From Captain Thomas Black, resigning the Office of the President of the Society, and requesting to be allowed to continue his connection with it as an Honorary Member; and the following from Dr. David Livingstone:—

"To Henry Morland, Esq.,

Honorary Secretary, Bombay Geographical Society.

My Dear Sir,—I beg to assure you that I feel extremely obliged by the Resolution passed by the Fellows of the Bombay Geographical

Society, and it would give me great pleasure to meet any of them in a quiet way; but as I am only hoping to do something deserving their approbation in my proposed journey, it would be more agreeable to receive the address in the event of my being spared to return than it would be now, when I am only 'putting on the harness.' Allow me to add that I prize very highly the kindly feelings which prompted the Society to offer the honour, and I thank you very much for your good will.

I am, &c.,

DAVID LIVINGSTONE.

Poona, 6th October 1865."

Captain Black's resignation of the office of President of the Society was accepted with much regret, and he was elected an Honorary Member by acclamation. The consideration of the nomination of his successor was reserved for the next meeting.

Paper.—The following Paper, which was contributed by Government, was then read by the Acting Secretary:—

"Report by Lieut. Colonel F. J. Goldsmid, on his overland journey from Bagdad to Constantinople, through Turkish Arabia and Asia Minor."

The best thanks of the Society were voted to his Excellency the Governor in Council for this valuable communication.

At the close of the proceedings, the Acting Secretary, Lieut. Henry Morland, F.R.A.S., intimated his intention of going home for a short time, and requested that his successor be appointed.

It was then proposed by Captain W. C. Barker, and seconded by Captain A. Phillips. and carried unanimously—"That Lieut. W. P. Arnot he asked to act as Acting Secretary from the date of Lieut. Morland's departure."

Lieut. Arnot, in accepting the appointment, thanked the Society for this honour, and the meeting was adjourned.

SESSION 1865-66.

THIRD MEETING, *December 21st*, 1865.

The Ordinary Monthly Meeting of the Bombay Geographical Society was held in their New Rooms, on the basement story of the Town Hall, on Thursday, the 21st December, at half-past 4 P.M.

Present.—The Rev. W. K. Fletcher, M.A., *Vice-President*, in the chair; James Scorgie, Esq., F.C.S.; J. P. Hughlings, Esq., B.A.; Bhugwandas Purshotumdass, Esq.; Venayekrow Jugonnathjee Sunkersett, Esq.; Mirza Ali Jan, Esq.; Commander G. T. Robinson; Atmaram Pandurang, Esq., G.G.M.C.; A. Taylor, Esq.; G. C. M. Birdwood, Esq., M.D., *Members;* and D. J. Kennelly, Esq., *Corresponding F.R.G.S., Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Member proposed.—R. G. Walton, Esq.

Donations.—The following donations were laid before the Society, for which their best thanks were requested to be conveyed to the donors:—

1. Transactions of the Grant College Medical Society, No. 1, 1865. By the Society.
2. Papers relating to the Constitution and Functions of the Council of His Excellency the Governor of Bombay for making Laws and Regulations. By the Bombay Government.
3. Papers relating to the construction of a proposed Railway from Jamboosur to Broach, with a Map. By the Bombay Government.
4. Papers relative to the Introduction of Revised Rates of Assessment into the eight Talookas and two Pettas of the Khandeish Collectorate. By the Bombay Government.
5. Annual Report of the Geological Survey of India, and of the Museum of Geology, Calcutta. By the Superintendent, Geological Survey of India.
6. Memoirs of the Geological Survey of India. Vol. 4., and Vol 5, Part 1. By the Bengal Government.

7. Memoirs of the Geological Survey of India. Palæontologia Indica, Vol. 3, Parts 8 and 9. By the Bengal Government.

8. Report of the External Commerce of the Presidency of Bombay for the year 1864-65. By the Commissioner of Customs, Salt, and Opium.

9. Report of the Agri-Horticultural Society of Western India for the year 1864. By the Society.

Letters.—The following letters were then read :—

1. From the Secretary Bombay Mechanics' Institution, acknowledging with thanks Vol. 17 of the Society's Transactions. 2. From T. D. Thomson, Esq., 11, Carey Street, London, advising the transmission of Books on account of the Cursetjee Furdoonjee Paruck Presentation, and promising to send reprints of Vol. 6 of the Society's Transactions.

The Society then proceeded to the election of a President in place of Captain Thomas Black, resigned. Mr. Kennelly said he felt it would be a gratification to the Members present to know that when in London he had received from the officers of the Royal Geographical Society their assurance of the high esteem in which they held our Vice-President Captain Osborn, and moreover expressed the hope, as a Fellow of theirs, he would prove instrumental in cementing more closely the two Societies. His merit as a Geographer was of a high order, and too well known to all present. He had therefore very much pleasure in proposing Captain Sherard Osborn, C.B., R.N., F.R.G.S., to be President of the Society.

The Rev. W. K. Fletcher, *Vice-President*, said it gave him very much pleasure to second a proposition which would have the effect of placing so able a Geographer as Captain Osborn at their head.

Captain Osborn was then unanimously elected President of the Society.

The Secretary having laid on the table the 17th Volume of the Society's Transactions, and also two copies of the reprint of Volume 6, published at the expense of Mr. Sorabjee Pestonjee Framjee, and having explained that in addition to the portion of the Cursetjee Furdoonjee grant of Books arrived by the mail, another and last shipment would shortly be on the way, and that the General Index to the Society's 17 volumes of Transactions would shortly be through the press.

Mr. Venayekrow Jugonnathjee Sunkersett moved that the best thanks of the Society be given to Mr. Kennelly, the Honorary Secretary, for the able and indefatigable manner in which, while here and in England, he had laboured in behalf of the Society's best interests.

Dr. Birdwood had very great pleasure in seconding his friend Mr. Sunkersett's motion. He also congratulated the Society on Mr. Kennelly's return to Bombay, and hoped that he might long continue their Secretary. It was owing to his exertions that the Society had continued to prosper against so many adverse circumstances.

The Secretary then moved that the following Sub-Committee be nominated to consider any proposition which might come before the Society for its amalgamation with the Bombay Branch of the Royal Asiatic Society :—

Captain Sherard Osborn, *President*; Captain W. C. Barker, *Vice-President*; Rev. W. K. Fletcher, *Vice-President*; Dr. G. C. M. Birdwood, and the *Honorary Secretary*, ex-officio.

Dr. Birdwood, in seconding the proposition, said that he had long talked over the suggested amalgamation with Mr. Kennelly, and intended proposing it to the Asiatic Society at their next meeting. It would be very much for the advantage of both Societies. It would be difficult for the Geographical Society to hold its own, now that the Indian Navy had been done away with, whereas by joining the Asiatic Society it would become a favoured partner in an income of about Rs. 30,000 a year. By the amalgamation, the monthly meeting of the united Societies would be more interesting, and their common volume of Transactions more valuable. The only difficulty in the way was in disposing of those members—less than half of the Geographical Society—who were not members of the Asiatic. Those who were members of both Societies would save Rs. 15 a year by the amalgamation, and to those who were members of the Geographical only, the Asiatic Society would very possibly permit the privilege of joining them without ballot. This would dispose of the only difficulty in the way of the suggested amalgamation. This Society would not become extinct in the Asiatic, but would form a section of the latter, with its own office and office-bearers.

The Sub-Committee was appointed, and the meeting stood adjourned.

SESSION 1865-66.

Fourth Meeting.—*February 16th*, 1866.

The adjourned Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Friday, the 16th February, at 5 P.M.

Present.—The Rev. W. K. Fletcher, M.A., *Vice-President*, in the Chair; R. S. Sinclair, Esq., LL.D.; J. P. Hughlings, Esq., B.A.; J. Scorgie, Esq., F.C.S; J. Firth, Esq.; F. A. R. Morrison, Esq.; Lieut. W. P. Arnot; F. J. Candy, Esq., M.A.; W. Wilkins, Esq., *Members;* and D. J. Kennelly, Esq., *Corresponding F.R.G.S., Honorary Secretary.*

The minutes of the last Meeting were read and confirmed.

Election.—R. G. Walton, Esq., C. E.

Member proposed.—J. Mackinlay, Esq.

Donations.—The following donations were laid before the Society, for which their best thanks were requested to be conveyed to the donors :—

1. Proceedings of the Royal Geographical Society of London, Vol. 9, No. 6. By the Society.
2. Proceedings of the Royal Institution of Great Britain, Vol. IV., Parts 5 and 6. By the Society.
3. Reports of the Geological Survey of Victoria for the years 1857 to 1865. By the Surveyor General of Victoria.
4. Reports on the Gold and Silver-bearing Reef of the District of St. Arnaud, for 1864. By Ditto.
5. Mineralogical Surveyor's Reports of Victoria, for 1856-57. By Ditto.
6. Report on the Artesian Wells of Victoria for 1856-57. By Ditto.
7. Diary of J. MacDouall Steuart's Explorations from Adelaide, South Australia, across the continent of Australia. By Ditto.
8. Report by A. R. C. Selwyn, Esq., on the Coal Field near Cape Patterson. By Ditto.

9. Progress Report from the Select Committee upon Coal Fields of of Victoria for 1856-57. By the Surveyor General of Victoria.

(MAPS.)

Australia.

Australia, Map of Discovery, by John MacDouall Steuart, showing his Route across, and fixing the centre of the continent of, 1861.

Australia (South), Part of, showing the Recent Discoveries.

Australia (South), Map of the Province of, compiled from official Surveys in the office of the Surveyor General, 1862. 2 copies.

Australia (South) :—

Adelaide, Map of the County of, 1859.

Eyre, Map of the County of, compiled from official Surveys, by J. H. Braddock, 1860.

Gawler, Map of the County of, 1857.

Grey, Map of the County of, 1860.

Hindmarsh, Map of the County of, compiled from official Surveys, by M. O'Reilly, R.E., 1860.

Light, Map of the County of, compiled from official Surveys, by J. W. Deering, 1857.

Russell, Map of the County of, 1857.

Stanley and Burra, Map of the Counties of, 1857.

Sturt, Map of the County of, 1859.

Brisbane, in the County of Stanley, Plan of the city and environs of, showing the Electoral Districts of North Brisbane, South Brisbane, and Fortitude Valley. 2 copies.

Burnett and Wide Bay, Electoral Districts of.

Clermont, Leichhardt, and Maranoa, Electoral Districts of.

Curtis (Port), in Queensland, Electoral District of.

Ipswich, in the county of Stanley, Plan of the Town of, showing Electorate. 2 copies.

Kennedy, Electoral District of.

Maryborough, Electoral District of.

New South Wales:—

Argyle, Map of the county of, 1862.

Bligh, County of, 1861.

Clarence, County of, 1864.

Clarence, Reference to portions in the County of, less than two hundred acres.

Deniliquin (North) and South Deniliquin, in the county of Townsend, Plan of the Towns of, 1863.

Mihi and Salisbury, in the County of Sandon, Plan of 194 Portions of Land in the Parishes of, 1865.

Moama, Plan of the Town of, at Maiden's Ferry, Parish of Moama, County of Cadell, 1862.

Moree, in the Gwydir District, Plan of the Town of, 1861.

New South Wales, North East Sheet of Colony, Map of.

New South Wales, South East Sheet of Colony, Map of.

Sandon, Plan of the County of, 1863.

Rockhampton, Electoral District of.

Toowoomba and Drayton, Electoral District of.

Victoria, Geological Map of. By A. R. C. Selwyn. 1863.

Victoria, Geological Survey of, 49 Plates.

Warrego and Mitchell, Electoral Districts of.

Warwick, Electoral District of.

Wolomoloo Bay, Plan of, as reclaimed, showing the Allotments to be offered for Sale. 1865.

Letters read.—From the Secretary, Literary and Philosophical Society of Manchester; Principal, University Library, Cambridge; Secretary, Society of Antiquaries of London; and the Secretary. Royal Academy of Science, Munich, acknowledging, with thanks, Vol, 17 of the Society's Transactions. 2. From Dadabhai Naoroji, Esq., London, acknowledging, with thanks, Vol. 17 of the Transactions, and the intimation of his being elected a Non-Resident Member of the Committee. 3. From Messrs. Smith, Elder, & Co., London, acknowledging with thanks the remittance for £53 4*s.* 8*d.* on account, and informing that the Copies of the Transactions sent to their care were distributed as directed. 4. From Messrs. Remington and Co., in-

forming that, owing to the Secretary's failing to give them the customary notice of thirty days before the withdrawal of Rs. 2,080 in favour of the B. E. S. Press, the Secretary has treated the Society's account as one at call, and therefore for the current year they will only allow 2 per cent. interest instead of 5 per cent. as heretofore. 5. From T. D. Thomson, Esq., London, dated 18th January last, forwarding, for being numbered, MS. copy of books to be added to the Library Catalogue, and requesting to be informed if the volume of the General Index, &c. is to be bound. 6. From ditto, dated 3rd January last, forwarding an Invoice for £149 5*s*. 0*d*. on account of reprints of Vol. VI. of the Transactions, and advising the despatch, per Ship "Palmerston," of a case containing the volumes. 7. From Sorabjee Pestonjee Framjee, Esq., stating, in reply to the Secretary's letter, that he would be happy to pay the amount required in excess of his original grant for reprint of Vol. VI. of the Society's Transactions. 8. From Lieut. W. P. Arnot, proposing John Mackinlay, Esq., as a Member of the Society. 9. From the Rev. W. K. Fletcher, M.A., accepting the office of a Member of Sub-Committee for the purpose of considering any proposition for the amalgamation of the Society with the Bombay Branch Royal Asiatic Society. 10. From Captain W. C. Barker, declining the above office. 11. From Captain Sherard Osborn, C.B., F.R.G.S., declining to accept the Presidentship of the Society, owing to his numerous avocations, and requesting to convey to the Society his grateful sense of the honour they so kindly offered him. 12. From C. Gonne, Esq., Secretary to Government, Political Department, forwarding two papers to the Society; and the following from W. E. Frere, Esq., late President of the Society:—

"My dear Sir,—By the same steamer as will take this, I have the pleasure to send you two tin cases, which, with two parcels enclosed in a box sent to the Secretary Bombay Branch Royal Asiatic Society, contain all the Maps at present procurable of the Australian Colonies. I procured them from the several Governments there for the Society, to whose collection of Maps I trust they will form an important addition. I did not in my travels visit Western Australia, so there are no Maps of that part of the country. An application to the Governor at Perth might procure them, if there are any.

There is no General Map of Queensland published by Government; but the Surveyor General, Mr. Gregory, promised to send a copy of

the very beautiful Map they are now preparing to the Society, when published. Mr. Davidson, the Surveyor General, New South Wales, promised to do the same with regard to the Map they are preparing of that Colony.

I was unable to procure the Maps of Tasmania before I left; but Colonel Gore Browne, the Governor of that Colony, kindly promised to have them sent to you; and I trust you will receive them shortly. The Society will then be in possession of a complete set of Maps of those Colonies; and if they can by any means keep up a communication with the different Surveyors General, and procure additional Maps when published, the benefits may be mutual. I need not assure the Society that in this or in any other way, or on any other subject, they aym always command my services.

I am, my dear Sir,
Yours very faithfully,
W. E. Frere.

Point de Galle, 16th December 1866."

The Chairman then read Mr. Kennelly's letter of resignation, and the minutes thereon by the members of the Committee, as follows:—

"To the General Committee
of the Bombay Geographical Society.

Gentlemen,—Owing to my final retirement from India on the 20th instant, I am compelled to place my resignation of the office of Secretary in your hands,—an appointment with which the Society honoured me seven years ago.

Looking back to the labours of the late Dr. George Buist, whom I succeeded in January 1859, I am made sensible of how little I have done in behalf of the interests of the Society, as I also am of the kindness and consideration received at the hands of its members.

I am not without hope that the amalgamation of this with the Bombay Branch of the Royal Asiatic Society may be successfully accomplished; and it is my regret that a hastened departure will not allow me to take a part in effecting so desirable an arrangement.

I shall deem it a privilege, if permitted, to complete the Society's General Index and Catalogue now in the press at home; and I need

not say how happy I shall be at all times to render any assistance in my power towards the furtherance of its objects and interests.

Wishing the Society every success in its endeavours on the behalf of science—I have the honour to be, &c.,

D. J. KENNELLY."

"I am very sorry for the interests of the Geographical Society that it is to lose the services of its able Secretary, Mr. Kennelly, who has devoted so much time and labour on its behalf. Mr. Kennelly's very kind offer to complete the General Index and Catalogue, and his promise to render every assistance towards the furtherance of the objects and interests of the Society, are a graceful and valuable sequel to his past labour of love.

R. S. SINCLAIR.
W. C. BARKER.
W. K. FLETCHER.
SHERARD OSBORN.
JAMSETJEE JEJEEBHOY.
COWASJEE JEHANGHER.
J. P. HUGHLINGS.
A. C. GUMPERT.
R. HAINES."

The Chairman then expatiated at some length on the disinterested services rendered by Mr. Kennelly during his tenure of office of Secretary, in furthering the objects of the Society, and strengthening its financial position, and expressed his regret at this severance of his association with them.

It was then proposed by the Rev. Mr. Fletcher, seconded by Dr. Sinclair, and unanimously carried—"That the Society having heard with much regret that Mr. Kennelly's departure to Europe by the next ensuing steamer will deprive them of his most valuable labours as Secretary, tender him their grateful thanks for the diligence and ability with which he has conducted the Society's business since his appointment to the office in January 1859, and offer for his acceptance a complete set of the Society's Transactions, handsomely bound, and inscribed, and unanimously elect him an Honorary Member of the Society."

It was then proposed by the Rev. Mr. Fletcher, seconded by Dr. Sinclair, and unanimously carried—"That Lieutenant H. Morland, F.R.A.S., be nominated Mr. Kennelly's successor, and that Lieut.

W. P. Arnot be asked to officiate as Secretary until Lieut. Morland's return from England."

The Society recorded with regret Captain Osborn's inability to accept the Presidentship of the Society, and it was unanimously resolved to call a special meeting for the purpose of electing a President.

The following papers, contributed by Government, were then read, and the best thanks of the Society were voted to His Excellency the Governor in Council for the valuable contributions:—

"Memorandum of Notes on Mekran, together with a report on a visit to Kej, and Route through Mekran from Gwadur to Kurrachee, by Lieut. E. C. Ross, Assistant Political Agent at Khelat."

"Remarks on the Pearl Oyster Beds in the Persian Gulf, by Lieut.-Colonel Lewis Pelly, Political Resident, Persian Gulf."

The meeting then separated.

SESSION 1865-66.

Fifth Meeting.— 19*th April* 1866.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 19th April, at half-past 4 P.M.

Present—The Rev. W. K. Fletcher, M.A., *Vice-President*, in the Chair; The Honorable George Foggo; J. Scorgie, Esq., F.C.S.; Captain George F. Henry; Mirza Ali Jan, Esq.; K. R. Kama, Esq.; Atmaram Pandoorung, Esq., G.G.M.C.; J. Firth, Esq.; Dhirujram Dulputram, Esq., G.G.M.C. *Members;* and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Elections.—J. Mackinlay, Esq.; The Honorable C. J. Erskine, C.S.

Members proposed.—Edward Chapple, Esq.; J. F. Cleary, Esq.; and Captain E. P. H. Thompson, of the ship "*Nada.*"

Donations.—The following donations were laid before the Society, for which their best thanks were requested to be conveyed to the donors :—

1. Report of the Bombay Chamber of Commerce for 1864-65. By the Bombay Chamber of Commerce.
2. Papers relative to the Introduction of Revised Rates of Assessment into part of the Uthnee Talooka, the Tasgaum and Sumpgaum Talookas, and part of the Padshapoor Talooka—all of the Belgaum Collectorate. By Government.
3. Report of Proceedings at the Conference held at Poona, 1865. By Government.
4. Constitution and By-Laws of the Boston Society of Natural History, with a List of Members. By the Society.
5. Journal of the Boston Society of Natural History, Vols. 6 and 7. By the Society.
6. Proceedings of the Boston Society of Natural History, Vols. 7, 8, and 9. By the Society.
7. Annual Report of Brevet Lieut.-Colonel J. D. Graham on the Improvement of the Harbours of Lakes, for 1858 and 1860. By the Author.
8. Report of Lieut. Colonel J. D. Graham on Mason and Dixon's Line. By the Author.
9. Report of the Superintendent of the United States Coast Survey. By the Superintendent.
10. Results of the Meteorological Observations made at Washington, from 1854 to 1859. By the Smithsonian Institution, Washington.
11. Smithsonian Contributions to Knowledge, Vol. 14. By the Smithsonian Institution, Washington.
12. Memoirs of the Geological Survey of India. Palæontologia Indica. By Dr. Oldham, Superintendent.
13. Map of Tasmania in 1859, by James Sprent, Surveyor General. By the Colonial Government, Tasmania.

Letters.—The following letters were then read :—1. From the Secretary, Smithsonian Institution, Washington; Principal Librarian.

British Museum; Secretary, Geological Society of London, acknowledging with thanks Volume 17 of the Society's Transactions. 2. From Dr. Oldham, Superintendent Geological Survey of India; S. L. Abbot, Esq., Corresponding Secretary, Boston Society of Natural History; Joseph Henry, Esq., Secretary, Smithsonian Institution, Washington; Colonel W. Kendall, Acting Secretary to Government, P. W. Department, forwarding donations for the acceptance of the Society. 3. From the Colonial Secretary, Tasmania, informing the Society that instructions were issued, at the request of Mr. W. E. Frere, for a copy of Sprent's Map of Tasmania being forwarded to the Society, and stating that the Colonial Government would be glad to receive a copy of any late Map of the Bombay Territory. 4. From the Rev. Alexander Forbes, resigning the membership of the Society, in consequence of his intended departure to England. 5. From C. Gonne, Esq., Secretary to Government, Political Department, forwarding a communication received from the Political Resident at Aden, for the information of the Society.

The Rev. Mr. Fletcher then observed, that at the Meeting of the General Committee, held on the 10th instant, it was found desirable to have some by-law, about the election of President, added to the Rules of the Society, as there was every probability that an election of this nature at the General Meeting of the Society might some day prove inconsiderate and unsatisfactory. He therefore moved that —

"In the event of a vacancy in the office of President, the Committee shall proceed at their Meeting next ensuing after the vacancy to select the name of one gentleman for the office, who shall be proposed at the General Meeting thereafter first held for election."

This resolution was seconded by the Secretary, and unanimously carried.

The Rev. Mr. Fletcher then said:—I have the honour to propose the Honorable Claude J. Erskine as a fit and proper person to fill the office of President of this Society, vacant by the resignation of Captain Thomas Black. Mr. Erskine is too well known to need any eulogy from me. As an accomplished scholar and a man of large scientific knowledge, he will be acceptable, I believe, to all as our President, and as a member of Her Majesty's Government of Bombay,

he will have frequent opportunities of promoting the objects of our inquiry, and forwarding the interests of the Society.

This proposition having been seconded by the Secretary, was unanimously carried, and the Honorable Mr. Erskine was declared President of the Society by acclamation.

It was then proposed by Lieut. Morland, seconded by the Rev. Mr. Fletcher, and unanimously carried:—"That Commander G. T. Robinson be elected a Vice-President in place of Captain W. C. Barker, gone to Europe."

A Paper Report on the Soor Roadstead, and on the Creek of Jeraumah, between Soor and Ras-el-Hadd, by Lieut. H. W. Warner, Commanding "*Berenice*," contributed by Government, was then read by the Secretary.

The second paper announced for the evening was laid before the Society. It was a copy of a Map and of an Itinerary, received from the Political Resident at Aden, of the country passed over by the Field Force lately on service in the Foodlee Country.

The best thanks of the Society were then voted to His Excellency the Governor in Council for the two interesting communications, and the Meeting adjourned.

SESSION 1865-66.

Annual Meeting.—*September 20th*, 1866.

The adjourned Annual General Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday the 20th September, at 5 P.M.

Present.—G. C. M. Birdwood, Esq., M.D., *Senior Member*, in the Chair; J. P. Hughlings, Esq., B.A.; James Scorgie, Esq., F.C.S.; Frank A. R. Morrison, Esq.; J. Firth, Esq.; R. H. Showell, Esq.; F. J. Candy, Esq., M.A., *Members;* and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The minutes of the last Meeting were read and confirmed.

Elections.—Edward Chapple, Esq.; J. F. Cleary, Esq.; Captain E. P. H. Thompson, of the ship *Nada*, and the Honorable L. H. Bayley.

Donations.—The undermentioned donations were laid before the Society, for which their best thanks were requested to be conveyed to the donors:—

1. Bombay High Court Reports, Volume II., Parts I. and II. By the Bombay Government.
2. Diary of a Journey across Arabia, by Captain G. Forster Sadlier, compiled from the Records of the Bombay Government by P. Ryan, Esq. By Government.
3. Report on Vaccination throughout the Bombay Presidency and Sind, for 1865. By the Principal Inspector General, Medical Department.
4. Irrigation Projects for the Bombay Presidency. Tank at Ekrookh, near Sholapore. By the Bombay Government.
5. Deaths in Bombay during 1864. By the Principal Inspector General, Medical Department.
6. Results of Meteorological Observations taken at Port Louis, Mauritius. By C. Meldrum, Esq., Superintendent, Mauritius Observatory.
7. The first and second Annual Reports of the Geographical Society of Dresden. By the Society.
8. Bulletin of the Geographical Society of Paris for January February, March, and April 1866. By the Society.
9. Journal of the Royal Geographical Society of London, Volume 35. By the Society.
10. Proceedings of the Royal Geographical Society of London, Vol. 10, Nos. 2 and 3. By the Society.

A most interesting Collection of Books received on account of the Cursetjee Furdoonjee Paruck grant was laid on the table for the inspection of Members.

Letters.—The following letters were then read:—

1. From Commander G. T. Robinson, acknowledging Secretary's letter, dated the 23rd April last, and requesting to convey to the

Society the expression of his sincere thanks for the honour done him in his election as Vice-President. 2. From the Secretary, Girgaum Library, acknowledging with thanks Volume 17 of the Society's Transactions, and requesting to be supplied with all back numbers of the same. 3. From the Secretary Royal Asiatic Society, Secretary Imperial Geographical Society of Russia, acknowledging with thanks Volume 17 of the Society's Transactions. 4. From the Secretary, Geographical Society of Dresden, forwarding Annual Reports of the Society. 5. From T. D. Thomson, Esq., 11, Carey Street, advising the despatch of a case containing a fourth instalment of Books on account of the Cursetjee Furdoonjee grant. 6. From J. King, Esq., C.S., Acting Under Secretary to Government, General Department, forwarding copy of a Government Resolution calling the attention of the local Officers in Kattiwar and the countries bordering on the Runn of Cutch and the Gulf of Cambay to an article which appeared in the *Bombay Saturday Review*, published on the 18th August last, on the subject of geological action on the South Coast of Kattiawar and in the Runn, and requesting the Society to favour Government with a note of the principal facts to which the attention of observers should be directed, and of the manner in which observations should be taken; and the following from the Honorable C. J. Erskine, C.S. :—

"To the SECRETARY to the BOMBAY GEOGRAPHICAL SOCIETY.

SIR,—In acknowledging your letter of the 23rd instant, I beg you will express to the members of the Society my acknowledgments of the honour they have done me by electing me their President.

I am conscious that I have no claims on the consideration of the Society. But if they consider that it may be in my power, owing to circumstances, to do something to promote the objects they have at heart, I can only assure them that it will give me great pleasure to take any opportunity of doing so.—I have the honour to be, &c.

C. J. ERSKINE.

Bombay, April 24th, 1866."

The Government letter noticed above was referred to the General Committee for disposal.

The business of the monthly Meeting having been brought to a termination, that of the Annual Meeting was taken up, and the following gentlemen were declared, from the Voting Lists scrutinised by the Committee, to be the office-bearers for the Session of 1866-67 :—

Vice-Presidents.

1. The Rev. W. K. Fletcher, M.A.
2. Commander G. T. Robinson.
3. Deputy Inspector General of Hospitals A. H. Leith, M.D..

Resident Members of the Committee.

1. G. C. M. Birdwood, Esq., M.D.
2. Bháu Dáji, Esq., Hon. M.R.A.S.
3. Sir Jamsetjee Jejeebhoy, Bart., F.R.G.S.
4. R. S. Sinclair, Esq., LL.D.
5. J. P. Hughlings, Esq. B.A.
6. The Honorable George Foggo.
7. A. C. Gumpert, Esq.
8. The Honorable Munguldass Nuthoobhoy.
9. Cowasjee Jehangirjee Readymoney, Esq.
10. Thos. C. Hayllar, Esq.
11. Captain J. A. Fuller, R.E.
12. Ráo Sáheb Vishvanáth N. Mandlik.

Non-Resident Members.

1. Sir Alexander Grant, Bart., LL.D.
2. Dadabhai Naoroji, Esq.
3. Col. A. B. Kemball, C.B., F.R.G.S.
4. Surgeon J. H. Sylvester, F.G.S.
5. T. C. Hope, Esq., C.S.
6. General G. LeGrand Jacob, C.B.
7. H. E. Rear Admiral George St. Vincent King, C.B., R.N.
8. H. E. General Sir W. R. Mansfield, K.C.B.

Auditors.

G. C. M. Birdwood, Esq., M.D., and J. P. Hughlings, Esq., B.A., were appointed Joint Auditors of the Society's cash accounts for the past year.

The Honorary Secretary then proceeded to lay before the Society the following brief Summary of the proceedings of the past Session :—

Annual Report.

During the year under review the Society met five times, and the following were the Papers read at their Meetings respectively :—

1. Remarks by Lieut. Colonel Lewis Pelly on his Tour to the Plateau of Goosakhan and its adjacent hills. Contributed by Government, and read before the Society at the first Meeting, held on September 21st, 1865.

2. Report from Lieut. Colonel F. J. Goldsmid on his Overland Journey from Bagdad to Constantinople, through Turkish Arabia and Asia Minor. Contributed by Government, and read at the second Meeting, held on October 19th, 1865.

3. Memorandum of Notes on Mekran, together with a Report on a visit to Kej, and route through Mekran from Gwadur to Kurrachee, by Lieut. E. C. Ross. Contributed by Government, and read at the fourth Meeting, held on February 16th, 1866.

4. Remarks on the Pearl Oyster Beds in the Persian Gulf, by Lieut. Colonel Lewis Pelly. Contributed by Government, and read at the same Meeting.

5. Report on the Soor Roadstead and on the Creek of Jeraumah between Soor and Ras-el-Hadd, by Lieut. H. W. Warner, I. N. Contributed by Government, and read at the fifth Meeting, held on April 19th, 1866.

6. Copy of a Map and of an Itinerary, received from the Political Resident at Aden, of the country passed over by the Field Force lately on service in the Foodlee Country. Contributed by Government, and read at the same Meeting.

The Members numbered on the Society's list at the last annual meeting were 152. Since then there have been removed—

By Death—3.

The Honorable Jugonnathjee Sunkersett.

Robert Haines, Esq., M.B.

J. Hurst, Esq.

By Retirement from India—4.

The Honorable H. L. Anderson., C.S.

Edwin Heycock, Esq.

Captain Thomas Black.

D. J. Kennelly, Esq., *Corresponding F.R.G.S.*

By Resignation of Membership—2.

M. Kane, Esq., M.D., M.A.

The Rev. Alex. Forbes.

In all eight members. On the other hand there were admitted to membership the following :—

1. Lieut. Colonel J. S. Gell.
2. Captain George Henry.
3. J. D. Macdonald, Esq.
4. H. Warner, Esq.
5. E. S. Dawes, Esq.
6. R. G. Walton, Esq., C.E.
7. J. Mackinlay, Esq., C.E.
8. The Honorable C. J. Erskine, C.S.
9. Edward Chapple, Esq.
10. J. F. Cleary, Esq.
11. The Honorable L. H. Bayley.
12. Captain E. P. H. Thompson.

In all 12 members, leaving a total of 155 members at this date against 152 at the last anniversary meeting.

The Society have sustained a heavy loss in the death of the late Honorable Jugonnathjee Sunkersett, who after a long, well-spent, and meritorious life, was suddenly snatched away from the sphere of his usefulness. He joined the Society in 1850, and ever since his connec-

tion with them was their staunch friend, and one of their warmest supporters.

It is also a mournful task to have to advert to the great loss we have sustained by the demise of R. Haines, Esq., M.B., who died on the 26th April last. His period of membership dates from 1849. Beneath the most unassuming manners he possessed a fund of scientific attainments, which were always at the call of the Society.

The Honorable H. L. Anderson joined the Society in 1855, and, in addition to personal co-operation, took every opportunity which his official position as Chief Secretary to the local Government gave him, of advancing to the best of his power the interests of our body.

Edwin Heycock, Esq., was admitted a Member in the year 1859. During the period of his membership he always displayed a readiness to forward the objects of the Society. The paper read by him before the Society regarding "The Mosaic Account of the Passage of the Israelites out of Egypt supported by the Geographical Configuration of the country surrounding the Gulf of Suez," will be found in the 16th Volume of the Society's Transactions.

D. J. Kennelly, Esq., Corresponding F.R.G.S., joined the Society in 1856, and since January 1859 filled the office of their Honorary Secretary, in succession to the late Dr. Buist. Owing, however, to his final retirement from India on the 20th February last, he was compelled to resign the Secretaryship. Mr. Kennelly's disinterested services in behalf of the Society during a period of seven years, and his unremitting exertions in strengthening their financial position by securing extraordinary donations from the more opulent of the members, were acknowledged by them in the following Resolution, which was proposed by the Rev. W. K. Fletcher, M.A., seconded by Dr. R. S. Sinclair, and unanimously carried:—

"That the Society having heard with much regret that Mr. Kennelly's departure to Europe by the next ensuing steamer will deprive them of his most valuable labours as Secretary, tender him their grateful thanks for the diligence and ability with which he has conducted the Society's business since his appointment to the office in January 1859, and offer for his acceptance a complete set of the Society's Transactions, hand-

somely bound and inscribed, and unanimously elect him an Honorary Member of the Society."

Copies of the reprint of Volume VI. of the Society's Transactions, published at the expense of Sorabjee Pestonjee Framjee, Esq., were transmitted by the Society's agent in London three months back, and are shortly expected to arrive here. The original grant of Rs. 1,000 for the above purpose has been exceeded, and Mr. Sorabjee has, with his usual munificence, consented to bear the excess.

The General Index to the 17 Volumes of the Transactions, together with the Catalogue of the Charts, &c., will shortly be through the press, under the supervision of Mr. Kennelly, who has kindly undertaken to attend to their completion. The Society need not be reminded that to enable them to carry out the publication of the same, they are indebted to the liberality of Bhugwandass Purshotumdass, Esq., who placed the sum of Rs. 3,500 at their disposal last year.

Four instalments of books on account of the Cursetjee Furdoonjee Paruck grant have come to hand, and another and last shipment is shortly expected. Rs. 100 out of Mr. Cursetjee's donation have been reserved for a bookcase for the accommodation of this collection.

Mr. Premchund Roychund's donation of Rs. 5,000 for the purchase of Maps, Charts, &c., still remains unexpended. Early opportunity will, however, be taken to give effect to the wishes of the munificent donor.

Among the many donations received during the last Session, that of Maps of the Australian Colonies, by the several Governments, at the instance of W. E. Frere, Esq., during his tour in that quarter, requires a prominent mention.

Copies of Volume XVII. of the Society's Transactions were placed in the hands of the members in October last, and opportunity will be taken for preparing the 18th Volume.

At the conclusion of the Report the annual Statement of Receipts and Disbursements on account of the Society from 1st May 1865 to 30th April 1866, submitted to the Society, showed a balance of Rs. 9,983-1-6 to their credit. In this sum are comprised the cash balances of the several donations in trust with the Society.

The best thanks of the Society were then voted to the Honorable the President, to the Honorary Secretary, and to the office-bearers of the past year, and the Meeting adjourned.

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SESSION 1866-67.

First Meeting.—*November 15th*, 1866.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday the 15th November 1866, at 5 P.M.

Present.—James Burgess, Esq. M.R.A.S., *Senior Member*, in the chair; J. Firth, Esq.; J. Mackinlay, Esq.; K. R. Kama, Esq.; Edward Chapple, Esq.; Dhirujram Dulputram, Esq., *Members;* and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The Minutes of the last meeting were read and confirmed.

Donations.—The following Donations were laid before the Society, for which their best thanks were requested to be conveyed to the donors:—

1. Papers relating to Revised Rates of Assessment for 13 different Talookas of the Tanna Collectorate. Presented by Government.
2. Water Supply of Poona and Kirkee, with Plans and Estimates by Lieut. Col. Fife, R.E. By Ditto.
3. A Paper on Irrigation in the Southern Maratha Country, with a Map. By Ditto.
4. A Paper on Irrigation in the Deccan and Southern Maratha Country. By Colonel Playfair, R.E. By Ditto.
5. Irrigation Projects for the Bombay Presidency. Land in the Paihra and Godavery Valleys near Newassa, in the Ahmednuggur Collectorate. By Ditto.
6. Letters relating to Assessment of Lohara and Wurrungaum Pergunnas, and nine villages in Challisgaum Talooka. By Ditto.
7. Proceedings of the Royal Society, Vol. XIV., Nos. 71 to 77. By the Society.
8. Memoirs of the Literary and Philosophical Society of Manchester. 3rd Series. Vol. II. By the Society.
9. Proceedings of the above Society, Vols. III. and IV. By the Society.

10. Bulletin of the Geographical Society of Paris for July and September 1866. By the Society.

11. Memoirs of the Geological Survey of India. By the Bengal Government.

12. Annual Report of the Geological Survey of India, and of the Museum of Geology, Calcutta. By Ditto.

13. Catalogue of Meteorites in the Museum of the Geological Survey of India, Calcutta. By Ditto.

14. Catalogue of the Organic Remains belonging to the Cephalopoda in the Museum of the Geological Survey of India, Calcutta. By Ditto.

15. Proceedings and Transactions of the Meteorological Society of Mauritius. Vol. VI. By the Society.

16. Report of the Superintendent of the Government Observatory at Colaba. By the Superintendent of the Observatory.

17. Report on the Calcutta Cyclone of the 5th October 1864. By the Meteorological Committee of Calcutta.

18. Transactions of the Imperial Geographical Society of Vienna. 8 volumes. By the Society.

Letters read.—The following letters were then read :—

1. From Commander G. T. Robinson, and Dr. A. H. Leith, requesting the Secretary to convey to the Society their best thanks for their election as Vice-Presidents of the Society for the year 1866-67. 2. From Captain Sherard Osborn, C.B., and Lieut. W. T. Crockett, withdrawing from the Society. 3. From Henry F. Blanford, Esq., Honorary Secretary Meteorological Society, Calcutta, forwarding a report on the Calcutta Cyclone of 1864, and proposing for the consideration of the Society an exchange of their publications with those of the Meteorological Committee. 4. From S. Fotterley, Esq., Secretary, Imperial Geographical Society of Vienna, transmitting the whole of the Society's publications (Miltheilungen) for the acceptance of the Society, and requesting in exchange a complete set of the Transactions. 5. From Lieut. T. F. Dowden, R.E., Under Secretary, Public Works Department, forwarding Selections, Series Nos. 4 and 5. 6. From Dr. Thomas Oldham, Superintendent Geological Survey of India, forwarding donations. 7. From Dr. G. C. M. Birdwood, Uni-

versity Registrar, Bombay, requesting the use of the Society's rooms for four days for the University Examinations. 8. From A. V. Nursing Row, Esq., Daba Gardens, Vizagapatam, forwarding a paper containing the results of his meteorological observations, and stating that he should be happy to send them in future to the Society should they approve of them. 9. From J. King, Esq., Acting Under Secretary to Government, General Department, forwarding copies of extracts relative to an Earthquake which took place in Dadoo Talooka of the Kurrachee Collectorate.

The Honorary Secretary then proposed that Captain Sherard Osborn, C.B., R.N., F.R.G.S., be elected an Honorary Member of the Society, for his most acceptable services in furthering the objects of the science of Geography, and his valuable contributions to the Library of the Society during his sojourn here.

This Resolution having been seconded by Mr. Mackinlay, was unanimously carried, and Captain Osborn was declared an Honorary Member of the Society.

It was then unanimously resolved that the offer of the Meteorological Committee of Calcutta, and the Imperial Geographical Society of Vienna, for the exchange of their publications with those of this Society, be accepted.

The Honorary Secretary then read a communication—"Rassam's Mission to the Emperor Theodorus of Abyssinia: accounts of events from 28th January to 22nd March 1866"—received from Government.

At the conclusion of this paper the best thanks of the Society were voted to His Excellency the Governor in Council for this very interesting communication. The other papers announced for the evening were postponed to next month, and the Meeting separated at a very late hour.

SESSION 1866-67.

SECOND MEETING.—*December 20th*, 1866.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday the 20th December 1866, at half-past 4 P.M.

Present.—The Honorable C. J. Erskine, C. S., *President*, in the chair; The Rev. W. K. Fletcher, M.A, *Vice-President;* F. J. Candy, Esq., M.A.; J. P. Hughlings, Esq, B.A.; Surgeon James Welsh, F.R.C.S.; James Burgess, Esq., M.R.A.S.; Dhirujram Dulputram, Esq.; J. Mackinlay, Esq., *Members;* and Lieut Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Election.—Surgeon W. A. Shepherd.

Member proposed.—R. L. King, Esq.

The Honorary Secretary then read the following communication, received from Government:—

"*Extract of a letter from* Dr. Livingstone, *dated Ngomano, on the Rovuma River, 16th May* 1866.

We have just arrived at Ndoude's place, which is called Ngomano; confluence of the Loende and Rovuma, or Louma, as the natives call it. Dudoude, alias Ndoude Matumora, is the head of the Makonde tribe, but he has little real authority, and has just now suffered by an invasion of Mazitu or Tulus, who have cleared the country of food like a swarm of locusts.

Ndoude took refuge on an island, while the Mazitu feasted on his corn, and now that we have arrived at head quarters there is so much scarcity of provisions that we shall be obliged to decamp further inland as soon as possible.

We could not land at Rovuma, but went to a fine harbour called Kindany, about 25 miles north of it. We took up the trade route, which is about S.S.W. to Rovuma, and found the country covered with such dense jungle that we had to cut a way for the camels and buffaloes. Fortunately the Makonde were well accustomed to cutting it, and for a reasonable pay whittled through it with their tomahawks in a most adroit way. We rarely saw the country, but when by chance a glimpse was got, it appeared covered with dark green masses of foliage. It is the highlands that flank the Rovuma on both sides, and there are "wadys," in which one is completely lost in gigantic grasses. When we got about 100 miles up, the forest became more open, and we could move onwards without the use of the axe. The people were all

friendly, but they are divided into a great many little communities, each of which is nearly independent of every other. They clear considerable space for cultivation, and collect gum copal and sesamum seed for Arab traders. The sight of the camels and buffaloes was a great attraction. These animals got bitten with Tsetze the day after we left the sea coast, and several times afterwards. I had but three buffaloes and a calf; one of the buffaloes died, but whether from the bite of the fly, or from being overworked, I cannot say. Three camels died also, but the symptoms were so different from what I have before observed in horses and oxen that I am puzzled. Where gadflies and others of their kind bite them now, blood of the arterial colour flows from the spot. If the three buffaloes which are still alive continue to live it will be in spite of having been Tsetze-bitten eight times, and that severely. The mules and donkeys do not suffer. I am of opinion that Mombas would be a good place for an English settlement. The scarcity of provisions is a barrier in one way here, but in a year that will be different. The chief is anxious for trade, and that ways should be open from Ibo Kindanee and Kilwa to him. It is a meeting-place of roads as well as a confluence of waters, but I have not talked with him yet. I like Matumora or Ndoude much better the more I see of him. I shall make this head quarters for a while at least, and feel my way round Nyassa hence.

Matumora is a sensible man, and is often appealed to from his force of character: he has suffered severely from other tribes making slave raids upon him. He occupies a strong position, and has a great many people who have fled to him for protection. I have yet to try how he will like the plan of a free settlement. We send off to-morrow twenty mules for food for my men. I have made a forced march forward for this object."

At the conclusion of this communication the Honorable the President and several of the members present having offered some observations on the interesting incidents touched upon by Dr. Livingstone, the following papers announced for the evening were submitted to the Society:—

Report by Dr. Colvill on the progress of Cholera during the past season on the borders of the Persian Gulf, and an account of his Land Journey from Bushire to Lingah. By Government.

Copy of a Letter from the Political Agent in Kutch, descriptive of a Collection of Ancient Coins of that Province, presented to Government by His Highness the Rao. By Government.

Report by Lieut. Colonel Merewether, describing the various places lately visited by him between Aden and Suez. By Government.

Copy of a Sketch Map received from the Political Resident at Aden, of the Country passed over by the Troops during the recent operations against the Foodlee Tribe, together with a copy of the Descriptive Remarks which accompanied it. By Government.

Copy of a Letter from the Political Agent in Turkish Arabia, and of an interesting Memoir (therewith submitted) on part of Mesopotamia, situated between Sheriat-el-Beyta and The Ibrahim, prepared by Lieut. Bewsher. By Government.

Report on the Physical Description of the Country traversed by Lieutenent Colonel Lewis Pelly, between Bunder Abbass and and Cape Jusk, in 1864. By Government.

The best thanks of the Society having been voted to His Excellency the Governor in Council for the most acceptable and interesting communications, the meeting adjourned.

SESSION 1866-67.

THIRD MEETING.—*February 21st*, 1867.

The ordinary monthly meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 21st February 1867, at 4 P.M.

Present:—The Honourable C. J. Erskine, C.S., President, in the Chair; The Rev. W. K. Fletcher, M.A., Vice-President; J. Burgess, Esq., F.R.G.S., M.R.A.S.; Homjee Cursetjee Dady, Esq.; Dhirajram Dalpatram, Esq.; Professor F. J. Candy, M.A.; J. E. C. Price, Esq.; Burjorjee Sorabjee Ashburner, Esq.; Culliandass Mohundass, Esq.; Bhugwandass Poorshotumdass Esq.; K. R. Kama, Esq., *Members;* and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The Minutes of the last Meeting were read and confirmed.

Election.—R. L. King, Esq.

Member proposed.—D. E. Gostling, Esq.

Donations.—The following donations were laid before the Society, for which it was requested their best thanks should be conveyed to the donors :—

1. Bulletin of the Geographical Society of Paris for November and December 1866. By the Society.
2. Journal of the Geographical Society of Geneva, Vol. V., Nos. 1, 2, and 3. By His Excellency the Honourable Sir H. B. E. Frere, G.C.S.I., K.C.B.
3. Bombay High Court Reports, Vol. II., Part 3. By Government.
4. Selections from the Records of the Bombay Government, containing Correspondence on the subject of Lighting up the Entrance of the Harbour of Bombay. By Government.
5. Report on the External Commerce of the Presidency of Bombay for the year 1865-66. By Government.

Letters read.—The following letters were then read :—

1. From Dr. Thomas Oldham, Superintendent of the Geological Survey of India, forwarding a donation for the acceptance of the Society. 2. From Lieut. T. F. Dowden, Under Secretary to Government, Public Works Department, forwarding donations for the Society. 3. From Lieut. Col. F. Conybeare, requesting refund of the sum of Rs. 15 paid by the late Surgeon James Welsh on account of his subscription to the Society for the year 1867-68 in advance; and the following was received from Government, which with the reply is given below *in extenso* :—

"No. 1693 of 1866.

General Department.

Bombay Castle, 27th August 1866.

To the Secretary to the Geographical Society, Bombay.

Sir,—I am directed by his Excellency the Governor in Council to forward to you, for the information of the Bombay Geographical So-

No. 1692, dated 27th August 1866.

ciety, the accompanying copy of a Resolution of Government, calling the attention of the local officers in Kattywar, and the countries bordering on the Runn of Cutch and the Gulf of Cambay, to an article which appeared in the *Bombay Saturday Review*, published on the 18th instant, on the subject of geological action on the south coast of Kattiawar and in the Runn, and to request that the Society will favour Government with a note of the principal facts to which the attention of observers should be directed, and of the manner in which observations should be taken.

I have the honour to be, &c.,
J. KING,
Acting under Secretary to Government.

No. 1692 OF 1866.

GENERAL DEPARTMENT.

Bombay Castle, 27th August 1866.

RESOLUTION OF GOVERNMENT.

The attention of the Commissioner in Sind, the Political Agents in Cutch, Pahlunpoor, and Kattiawar, of the Collectors of Ahmedabad and Kaira, and of the Public Works Officers in all the districts named, should be drawn to the accompanying extract from an article in the *Bombay Saturday Review*, of August 18th, 1866, on the geological action on the south coast of Kattiawar and in the Runn, with a request that they will, at their convenience, make inquiry from all quarters, where useful and reliable information is likely to be obtained, as to the fact, and take measures for a careful observation of facts bearing on the elevation or depression of land on the coasts of Cutch and Kattiawar for the future, and from time to time inform Government of the result.

3. Any reports of interest on these subjects may be sent to the Geographical Society, which may be asked to favour Government with a note of the principal facts to which the attention of observers should be directed, and of the manner in which observations should be taken.

3. It will be understood that this refers merely to the recent geological question of a rising or lowering of the coast, and not to distant geological, still less to political, questions.

(Signed) J. KING,
For Chief Secretary to Government.

The COMMISSIONER in SIND,
The COLLECTOR of AHMEDABAD,
The COLLECTOR of KAIRA,
The REVENUE COMMISSIONER, N. D.,
The POLITICAL DEPARTMENT of the SECRETARIAT,
The PUBLIC WORKS DEPARTMENT of the SECRETARIAT,
The SECRETARY, GEOGRAPHICAL SOCIETY (by letter).

Extract from an article in the "Bombay Saturday Review" of the 18th of August 1866, on the Geological Action on the South Coast of Kattiawar and in the Runn.

On the south coast of Kattiawar and in the Runn of Cutch we have some remarkable illustrations of the encroachment of land on sea, and sea on land, and of the alternate rising and sinking of land—simple operations, but to which the Geographical evolution of the five continents of the globe is due. For a long time past observers have supposed that the Gulf of Cambay has been gradually filling up. Several large continental rivers—the Taptee, Nerbudda, Mhye, and Saburmuttee—discharge the drainage of the Sautpoora, Vindhya, and Aravulli mountains into it; and, as a large portion of Guzerat has been deposited by them, it is not improbable that in time they may fill up the Gulf of Cambay. The gulf is full of shifting sandbanks, which make its navigation extremely difficult. But, notwithstanding all these indications of its being silted up, there are some who insist that the gulf is yearly increasing in extent, and steadily encroaching on the southern coast of Kattiawar. Whether the gulf is silting up or increasing in size cannot, of course, be determined except by observations, such as mapping soundings made at a fixed season yearly for a series of years. But there can be no doubt of the encroachments of the sea on the southern coast of Kattiawar, and it is not at all improbable that, simultaneously with the silting up of the Gulf of Cambay in continuation of Guzerat, all the south-east coast of Kattiawar is being swept into the ocean by the scour of the great rivers seeking their level in it. The creeks of

Bhownuggur, Dhollera, and Mhowa are yearly enlarging, and large quantities of soil are detached from their banks by the high tides of June and November. During the high tides of last June a considerable portion of the Mussulman burying-ground at Gogo was washed away by the sea, which at the same time found its way under the stone embankment of the pier, and formed a pool of salt water, still standing, between the town and its sea wall. The earth embankment that once stood between the sea wall of Gogo and the sea has been gradually entirely removed by the sea, which now everywhere licks the very walls of the town. This wall is now being undermined, and in a few years the south-east portion of Gogo will exist no more. The masonry abutment which protects a small Mussulman shrine in the wall close to the travellers' bungalow has already been completely broken up by the sea, and its fragments will be washed away into the ocean by the high tides of next November. Kattiawar may indeed become an island at last. At present in the monsoon it is almost an island, the Dhollera creek being connected by a chain of swamps with the Null; and were the Null once connected with the Runn, by any alteration in the level of the latter, such as indeed seems, as we shall presently see, to be going on at this time, Kattiawar would become an island. There can be little doubt that it was an island once. The whole character of the tract called the Bhal, extending from Gogo to Purnalla and Vayjee, some 90 miles north, bears evident signs of having been at some remote period covered with salt water. After the Bhal commences the Null Kanta, extending as far north as Shahpoor. This tract presents the same general geological and botanical features as the Bhal, and actually becomes submerged every monsoon. From Shahpoor to the Runn is only from 18 to 22 miles, and there can be little doubt that at one time the water of the Runn and the Gulf of Cambay were united through the Null Kanta and Bhal. Were, indeed, any subsidence to take place in the Runn, the sea water which would overflow it would seek its level through the Null Kanta and Bhal, and place a narrow strait between Wurdwan and Ahmedabad, and with the outfall of the Saburmuttee, Mhye, Nerbudda, and Taptee, separate Kattiawar from the mainland.

With regard to the Runn itself, there is proof positive that it was formerly, and within the historic period, entirely under the sea, and that Wowannia, Teekur, and Kherwera were considerable local ports.

McMurdo tells us that a vessel of considerable size was dug up out of the Runn, and that within the memory of man small boats had sailed over it. In fact, it is universally admitted that the Runn is upheaved sea bottom, upheaved by volcanic action; and there is little doubt that it is again, by the same action, being depressed. McMurdo, in his report to Government of October 2nd, 1815, says—"The boundaries of the Runn are as distinctly defined as those of the sea. They consist of a low rising bank, covered with vegetation distinct from the barren sand of the Runn. The banks are nowhere higher than sand hillocks. Many inlets or small branches of the Runn penetrate into the country, all bearing the characteristic appearance of the Runn, which is that of a sandy desert, a perfect plain in appearance, with the "Bheers" or elevated ridges above mentioned, extending longitudinally like islands. There is not a blade of vegetation on the Runn itself. It has every appearance of the sea having shortly withdrawn from it. This is supported by the semblance and production of the neighbouring country; and large stones are found on this shore, several miles from the present Runn, of a description similar to those used as anchors—they have holes bored through for the cable. On the shore at different places are shown small ancient buildings called *danderees*, or houses where the *dan*, or customs, were collected; and in short it is a tradition in the country that Khor, a village two miles east of Teekur, was a seaport town about fifty years since. The wreck of a vessel of a size far beyond that of any of the craft now in use in the Gulf of Cutch was discovered at Wowannia, sunk in the mud about fifteen feet. The sea is gradually encroaching there, and has assumed the shape of a deep and narrow creek, which at low water is left dry. As the bank was carried away the wreck became exposed, and the timber was used in the village of Wowannia for fuel. There was no iron in the vessel; she was bound by cordage of coir. These circumstances would induce a belief that at some former period the Gulf of Cutch penetrated very high up to the eastward, although it is a well-known fact that it has been increasing for these last hundred years, during which period it has been much enlarged." This paragraph was written fifty-one years ago, and thirty years ago Grant gave additional evidence of oscillations in the level of the Runn. It is now certain that the Runn is gradually sinking, and that the sea is year by year

overspreading a wider and wider surface of it. This advance of the sea in the Runn is very marked. Lieutenant Colonel Rigby, late Commissioner in the boundary disputes between the Gackwar and the Nawab of Joonaghur, two or three years ago laid down the frontier of the small village of Bheemkatta, situated on the borders of the Runn. Since then several acres belonging to the village have been overflowed by the sea.

The complete subsidence of the Runn would exercise a marked effect on the climate and prosperity of the adjacent countries. The temperature of Kattiawar, Cutch, and Pahlunpoor, would be lowered by several degrees; the rainfall over those countries increased; Wowannia and Jhinjoora would become great ports; and the strait formed between Wurdwan and Ahmedabad, through the neck of Kattiawar, would convert it into an island, and possibly become the course of the trade between Sind and Bombay, in place of the present ocean course. Unless also Ahmedabad and Agra are soon connected by rail, the formation of a strait through the neck of Kattiawar would open up all the trade of Rajpootana and the North-West Provinces to Bombay.

The rate at which the water is advancing both in the Runn and on the south coast of Kattiawar is obviously a matter of the very highest importance on scientific and economical and political grounds, and were annual observations of its advances made for a series of years at least, much scientific information, possibly throwing light on the general geographical evolution of land on the globe, would be gained. These observations might be made, at comparatively trifling expense, by Government authorising their Political Agents in Kattiawar, Cutch, and Pahlunpoor, to place mehtas at certain fixed points on their respective shores of the Runn to record yearly the date and the extent of the influx of the sea. In Kattiawar the best spots for stations would be Balumba, Mallia, Capurnee, Bujjana, and some stations on the boundary between the Rhadunpoor and Jhinjoowarrah talookas. The chiefs would voluntarily place mehtas at the stations named were Government to express a wish that they should do so. Mehtas should also be placed along the south coast of Kattiawar, at Gogo, Bhownuggur, and Dhollera, and it would be as well also to have a survey of the sandbanks in the Gulf of Cambay made yearly at a fixed season over the next ten or twenty years.

The flooding of the Runn by the sea is undoubtedly caused by volcanic action, now depressing as it once raised it, and not by the eroding action of the tides, to which the encroachments of the sea on the south coast of Kattiawar are due. In the 16th volume of the Transactions of the Bombay Geographical Society, General LeGrand Jacob records several volcanic shocks in the Runn, which but for him would never have been heard of; and Government should instruct the mehtas we have proposed that they should place at different stations to note the date of volcanic shocks also amongst their observations.

The reader will have remarked that Kattiawar, Cutch, and the Runn have been evolved exactly where great changes in their contour and oscillations in level might be expected. They lie in the angle, almost a right angle, between the west coast of India and the coast of the Mekran and Sind. Into that void the deposits of the Nerbudda, Taptee, Saburmuttee, and Indus are shot; and while the ocean currents would accumulate them just where Cutch and Kattiawar appear, the scour of the great Indian rivers flowing into the Gulf of Cambay would determine the contour of the southern border of Kattiawar, which might be expected to be more and more encroached on as increasing deposits in the Gulf of Cambay more and more deflected the scour of the Nerbudda, Mhye, and Taptee northward. The evolution of Kattiawar and Cutch is due also to volcanic action, and this connects the phenomena we are now reviewing with the geological history of the plains of Sind and Bengal. Where we now have the sandy plain of Sind and the rich plain of Bengal, was once a broad strait between continental Asia and the island which the Deccan then was. The Indus and Ganges are all that now remain of this strait, which was gradually filled up by the deposits of the tributaries of the Indus and Ganges, and their upheaval by volcanic force. That action is still in operation, and of course its effects are most marked in such a district as the Runn, lying almost level with the sea. The Venerable Archdeacon Pratt has made a calculation that the attraction of the Himalayas raises the ocean several hundred feet above its general level all along the western coast of India —the height to which the ocean is thus raised increasing gradually from Cape Comorin to the Coast of Sind, where, if we remember correctly, it stands nearly 1,000 feet above its general level. Well, if the Himalayas were to sink into the earth, as mountains often have sunk,

not only would Back Bay and the whole foreshore of Bombay Harbour be reclaimed without the cost of a farthing to the Back Bay, Elphinstone, Frere, Mazagon, and United Colaba Reclamation Companies, but for miles out into the Indian ocean the whole western coast of India would be in this sense "reclaimed," by the receding of the ocean, and Bombay left high and dry, "a city set on a hill" some 500 feet above the sea level; leaving its landlords, who in their ignorant selfishness fancy they owe nothing to commerce, to lament "How hath the golden city ceased!" Very slight oscillations in the Himalayas and Hindoo Kosh may, therefore, make all the difference in the Runn between its remaining the Runn, or again becoming an inlet of the ocean, and to Kattiawar between its continuing a promontory of India, or again becoming an island.

No. 1 OF 1867.

To J. KING, Esq., C.S.,

Acting Under Secretary to Government, General Department, Bombay.

Bombay Geographical Society's Rooms,
Town Hall, 7th January 1867.

SIR,—In reply to your letter No. 1693, General Department, dated the 27th of August 1866, I am directed by this Society to state for the information of Government that in their opinion the question raised by the *Bombay Saturday Review*, in an article in its issue of August 18th, entitled "Geological Action on the south coast of Kattiawar and in the Runn," is of great importance, and can only be set at rest by observations extending over several years.

2. There should be soundings taken in the Gulf of Cambay at the same season every year, and carefully mapped; and observations made, as proposed by the *Bombay Saturday Review*, by *mehtas* at different stations on the south coast of Kattiawar and along the Runn. As to the encroachments of the sea on the coast and in the Runn, inquiries should also be made as to whether anything exists in the traditions and literature of Kattiawar throwing light on the oscillations of the land in Kattiawar. Rao Saheb Mahipatram Rupram, Deputy Educational

Inspector, and Mr. Jettyshanker, School Master at Bhooj, might be referred to for the necessary information under this head.

3. But the only way to come to a true conclusion will be to make observations on the coasts of Kattiawar, and soundings in the Gulf of Cambay, extending over at least ten years; and as regards the soundings in the Gulf repeated again and again at intervals of twenty or thirty years. Ten years' observations will be quite sufficient perhaps to determine whether the sea is encroaching on the south coast of Kattiawar and in the Runn. It may be that the Rünn is subject to repeated oscillations, the effect of which, whether in depressing or raising it, will be as difficult and tedious to determine as the question of the filling up of the Gulf of Cambay.

4. The Society are also of opinion that the range of observations should be extended to Cutch and Sind on the north, and to the Northern and Southern Konkans on the south, as they believe the action of the sea on the coast of Kattiawar has a perceptible influence on the adjacent shores of Surat and the Northern Konkan.

I have the honour to be, &c.,

HENRY MORLAND,

Honorary Secretary to the Society.

At the conclusion of the above correspondence the Honourable the President said that, the ordinary business of the Meeting having come to an end, he felt sure they would all be glad to have an opportunity of expressing and recording, in the proceedings of the Society, their warm acknowledgments to its Patron, Sir Bartle Frere, for the consideration which he had always given to the affairs of the Society. His (Mr. Erskine's) connection with them was unfortunately of recent date. But there were other members whose experience extended over many years; and some of them, he was sure, would bear witness that, although many of the Society's Patrons had shown much interest in their proceedings, none had shown a more active desire to further the objects they had at heart than Sir Bartle Frere. He (Sir Bartle) had ever watched with attention the progress of scientific research and of geographical discovery in the east, and many or most of the adventurous officers who had started, of late years, from this part of the world, on exploratory journeys in India or Persia or Arabia or Africa, had enjoyed, not only the sympathy, but the advice and correspondence, of their retiring Patron. He could himself bear witness to the desire of Sir

Bartle Frere on all occasions to place, as soon as possible, at the disposal of the Society and of the public, the results of fresh discoveries, whenever he felt that he could legitimately do so. He (Mr. Erskine) believed that the records and transactions of the Society would amply bear out this statement; and, without longer detaining the Meeting, therefore, would move the Resolution which had been placed on the paper:—"That His Excellency the Honourable Sir Henry Bartle Edward Frere, K.C.B., G.C.S.I., is entitled to the special acknowledgments and gratitude of the Society for the warm interest he has taken in furthering their objects, and the distinguished patronage he has extended to them during the period of his governorship of the Bombay Presidency."

The Rev. W. K. Fletcher, M.A., Vice President, said:—

"The first intimation of the intention to submit the resolution which our Honourable President has just proposed in this meeting gave me unfeigned satisfaction, for I was aware how grateful the members of the Society would feel to His Excellency Sir Bartle Frere for his undeviating support and patronage during his tenure of office. This Society have been supplied with many valuable papers by his Government, and indeed I may say by far the largest proportion of the papers read during the last five years have been forwarded by him. I can personally testify to his deep interest in all the work of the Society. I have known him personally collate papers and examine minute points of scientific geography, and always with the view of forwarding the objects of the Society. I have great pleasure in seconding the Resolution which has been so ably proposed."

The Resolution having been put to the vote was unanimously carried by acclamation, and the Honorary Secretary was requested to communicate it to the Private Secretary for the information of His Excellency. The Meeting then adjourned to next month.

SESSION 1866-67.

FOURTH MEETING.—*March 22nd*, 1867.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Friday, the 22nd March 1867, at 5 P.M.

Present.—Commander G. T. Robinson, *Vice-President,* in the Chair J. Burgess, Esq., F.R.G.S., M.R.A.S.; A. C. Gumpert, Esq.; J. Macfarlane, Esq.; J. Mackinlay, Esq., *Members;* and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary.*

The minutes of the last meeting were read and confirmed.

Elections.—The Chevalier A. Thenon and D. E. Gostling, Esq.

Donations.—The undermentioned donations were laid before the Society, for which it was requested their best thanks should be conveyed to the donors:—

1. Abstract of the Proceedings and Reports of the International Sanitary Conference of 1866, compiled by Dr. A. H. Leith. By the Bombay Government.

2. Papers relating to the introduction of the Survey Rates into the Sehwan Talooka of the Kurrachee Collectorate. By Government.

3. Report of the Agri-Horticultural Society of Western India for the year 1865. By the Society.

4. Bulletin of the Geographical Society of Paris for the month of February 1867. By the Society.

Letters read.—The following letters were then read:—

1. From A. C. Gumpert, Esq., proposing the Chevalier A. Thenon, Consul for France, as a member of the Society. 2. From Limjee Manockjee, Esq., withdrawing from the Society. 3. From Messrs. Smith, Elder, & Co., enclosing a Statement of their account made up to the end of the year 1866, and requesting a remittance in liquidation of the same; and the following from the Honourable C. J. Erskine, C.S., President of the Society:—

"Dear Captain Morland,

I wish it had been in my power to do more for the Society in which you are so much interested, and for which you have worked so effectively. But when the office of President was pressed upon me not long ago, you were aware, I believe, through Mr. Fletcher, that I could not hope to hold it long, or to take an active part in your proceedings. The time of my departure is drawing near, and I should be glad if the Society would be good enough to make such arrangements as may

be necessary for the nomination of another and more useful President, as I am constrained to resign the honourable office.

I remain, yours very truly,

C. J. ERSKINE.

Bombay, March 12th, 1867."

The Chairman then read for the approval of the Society the following Resolutions, passed at the meeting of the Committee:—

1. Proposed by Commander G. T. Robinson, *Vice-President*, and seconded by the *Secretary*:—"That the Society receive with much regret the resignation of the Presidentship by the Honourable C. J. Erskine, C.S., on his proceeding to Europe, and desire to record their thanks for his services."

2. Proposed by Commander G. T. Robinson, *Vice-President*, and seconded by James Burgess, Esq., F.R.G.S.. M.R.A.S.,—"That His Excellency Lieut. General Sir Robert Napier, K.C.B., R.E., Commander-in-chief of the Bombay Army, be invited to accept the Presidentship of the Society; That his Excellency the Right Honourable Seymour Fitzgerald, Governor of Bombay, be requested to honour the Society by becoming their patron, in succession to Sir Bartle Frere, K.C.B., G.C.S.I."

There being no further business before the Society, the meeting adjourned to next month.

SESSION 1866-67.

ANNUAL MEETING.—*May 16th*, 1867.

The Annual General Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 16th May, at 5 P.M.

Present.—Manockjee Cursetjee, Esq., F.R.S.N.A.,F.R.G.S., *Senior Member*, in the Chair; Dr. Bháu Daji, Hon. M.R.A.S.; J. Burgess, Esq., F.R.G.S., M.R.A.S.; Surgeon J. H. Sylvester, F.G.S.; J. Firth, Esq.; J. Macfarlane, Esq.; D. E. Gostling, Esq., *Members*; and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary*.

The Minutes of the last Meeting were read and confirmed.

Donations.—The undermentioned donations were announced, for which the thanks of the Society were voted to the donors :—

1. Journal of the Royal Asiatic Society of Great Britain and Ireland, Vol. II., Part 2. Presented by the Society.
2. Proceedings of the Royal Society, Nos. 78 to 86. By the Society.
3. Proceedings of the Royal Institution of Great Britain, Vol. IV., Parts 7 and 8. By the Society.
4. Bulletin of the Geographical Society of Paris, for January and March 1867. By the Society.
5. Proceedings of the Boston Society of Natural History. By the Society.
6. Report of the Students' Literary and Scientific Society for the Session of 1865-66. By the Society.
7. Memoirs of the Geological Survey of India. Palæontologia Indica. By the Bengal Government.
8. Annual Report of the Board of Regents of the Smithsonian Institution, Washington, for the year 1864. By the Institution.
9. Reports of the extent and nature of the Materials available for the preparation of a Medical and Surgical History of the Rebellion. By the Surgeon General, Washington.
10. Results of the Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, in 1863. By the Royal Society, London.
11. Astronomical and Meteorological Observations made at the United States Naval Observatory during the year 1863. By the Superintendent.

Letters.—The following letters were then read :—

1. From the Librarian, Trinity College, Dublin, acknowledging with thanks copy of the General Index to the seventeen volumes of the Society's Transactions, and requesting a present of the first seven volumes of the Transactions to make the set of the Library complete. 2. From C. H. Crane, Esq., Surgeon General, Washington; S. L. Abbot, Esq., Secretary, Boston Society of Natural History, forwarding donations for the acceptance of the Society. 3. From His Excellency Lieut. General Sir Robert Napier, K.C.B., accepting the Presidentship of the Society, and conveying to the

Members his appreciation of the honour done him in offering him the same. 4. From H. E. Jacomb, Esq., C.S., Under-Secretary to Government, General Department, forwarding, for the information of the Society, the following papers in connection with the question raised in an article in the "*Bombay Saturday Review*," entitled "Geological Action on the South Coast of Kattyawar and in the Runn":—

"No. 854.

EXTRACT from the Proceedings of the Government of Bombay, in the General Department, dated 4th May 1867.

Read the following papers:—

Letter from Lieutenant H. MORLAND, F.R.A.S., F.R.G.S., Honorary Secretary, Bombay Geographical Society, to J. KING, Esq. C.S., Acting Under-Secretary to Government, No. 2, dated 5th January 1867.

In reply to your letter No. 1693, General Department, dated the 27th August 1866, I am directed by this Society to state, for the information of Government, that in their opinion the question raised by the "*Bombay Saturday Review*" in an article in its issue of August 18th, entitled "Geological Action on the South Coast of Kattyawar and in the Runn," is of great importance, and can only be set at rest by observations extending over several years.

2. There should be soundings taken in the Gulf of Cambay at the same seasons every year and carefully mapped, and observations made, as proposed by the *Bombay Saturday Review*, by "*Mehtas*" at different stations on the South Coast of Kattyawar and along the Runn. As to the encroachments of the sea on the Coast and in the Runn, inquiries should also be made as to whether any thing exists in the traditions and literature of Kattyawar throwing light on the oscillations of the land in Kattyawar. Rao Sahib Mahipatram Roopram, Deputy Educational Inspector, and Mr. Jettyshunker, Schoolmaster at Bhooj, might be referred to for the necessary information under this head.

3. But the only way to come to a true conclusion will be to make observations on the Coast of Kattyawar and soundings in the Gulf of Cambay extending over at least ten years, and as regards the soundings in the Gulf repeated again and again at intervals of twenty or thirty years. Ten years' observations will be quite sufficient, perhaps, to determine whether the sea is encroaching on the South Coast of Kattyawar and in the Runn. It may be that the Runn is subject to repeated oscillations, the effect of which, whether in depressing or raising it, will be as difficult and tedious to determine as the question of the filling up of the Gulf of Cambay.

4. The Society are also of opinion that the range of observations should be extended to Kutch and Sind on the North, and to the Northern and Southern

Konkans on the South, as they believe the action of the sea on the coast of Kattyawar has a perceptible influence on the adjacent shores of Surat and Northern Konkan.

Letter from J. KING, Esq., Under Secretary to Government, to T. OLDHAM, Esq., LL.D., Superintendent Geological Survey of India, No. 124, dated 17th January 1867.

I am directed by His Excellency the Governor in Council to forward copy of the accompanying correspondence noted in the margin, and to request that you will be good enough to favour this Government with your opinion and suggestions thereon.

Letter to the Secretary, Geographical Society, Bombay, No. 1693, dated 27th August 1866, with accompaniment.
Reply from Secretary, Geographical Society, Bombay, No. 2, dated 5th January 1867.
On the subject of the Geological action on the Coasts of Kattyawar and Cutch.

Letter from T. OLDHAM, Esq., Superintendent, Geological Survey of India, to J. KING, Esq., Acting Under-Secretary to the Government of Bombay, No. 576, dated 26th February 1867.

I have the honour to acknowledge receipt of your letter No. 124 of 1867, dated 17th January, giving cover to correspondence relative to the action on the Coasts of Kattyawar and Cutch, and requesting me to favour the Government of Bombay with my opinion and suggestions.

2. I have never had an opportunity of visiting any of the localities referred to, and on receipt of your letter I, therefore, took advantage of the fact that Mr, W. T. Blanford, Deputy Superintendent, Geological Survey, had been in Cutch, to refer the matter to him for his consideration, and have had the benefit of his local knowledge. Unfortunately, Mr. Blanford has only seen a small portion of the area referred to.

3. But the questions raised are of far more extended application than is here given to them, and I have the honour to submit to His Excellency the Governor in Council a statement of what measures appear to be needed for the full determination of the extent and nature of the geological action referred to. Evidence of this nature is really valuable only to the extent to which the searching question of "how much" can be safely answered.

Memorandum by T. OLDHAM, Esq., Superintendent, Geological Survey of India, dated 28th February 1867.

The article which appeared in the *Bombay Saturday Review* of 18th August 1866, from which an extract has been forwarded to me, raises questions which are of vast importance, and of far wider application than is therein attempted to be given to them. It is, perhaps, scarcely to be expected that a newspaper article would offer a fair opportunity for the discussion of such questions with

accuracy of expression and nice discrimination of fact, and a certain degree of looseness in the application of terms may fairly be looked for under such circumstances. The writer would seem to have had two distinct questions in view; one, the illustration and discussion of the encroachment of land on sea, or sea on land, as evidenced especially by the Gulf of Cambay and the Coast of Kattyawar; and the other, the illustration and discussion of the alternate (? successive) rising and sinking of land, as evidenced by the Runn of Cutch. There is, however, no necessary connection between these two questions; they may be entirely independent one of the other; nor indeed is it quite clear that the writer intended to convey the idea that in his opinion there was any such connection.

The first point to which he directs attention is the encroachment of the sea on the land along the South Coast of Kattyawar. He points out the local instances, in the Gulf of Cambay, of the universal fact that large rivers bring down to the sea and there deposit vast amounts of debris derived from the beds of rock and clay and sand, through which they pass, and illustrates the inevitable consequence of the discharge of such debris into a confined Gulf or Bay. There cannot be a shadow of doubt that the waters of the Taptee, Nerbudda, Mhye, and Saubermuttee, must, by the large discharge of silt which they carry down with them during every freshet, rapidly tend to fill up the Gulf of Cambay, and to push forward the line of coast lying between their mouths. But while this filling in may be rapidly progressing in one part of the Gulf, a cutting out and removal of parts of the shore may be as rapidly progressing in another part, and so far as the facts are stated, this would appear to be the true state of the case. The heavy discharge of the large rivers which drain into the Gulf from the east tends to fill up the basin on that side, and thus steadily, though slowly, to throw the force of the river streams so as to impinge upon the western shore. And the consequence seems to be the natural one; the western shore of the Gulf is being removed and swept away, while the eastern shore is gradually advancing. The amount of water annually thrown into the Gulf is probably not diminishing much, and every thing which tends to throw this body of water more against one shore than the other will (*cæteris paribus*) tend to produce an encroachment of the sea upon land in that direction.

I do not quite gather whether the writer intends to convey the idea that the south-east coast of Kattyawar is being swept into the ocean by the scour of the great rivers he has just spoken of, which come from the east: he says, "by the scour of the great rivers seeking their level in it" (the Gulf of Cambay). If he intends to convey the idea that the creeks of the south-east coast of Kattyawar are being scoured out by the water of the rivers, whose mouths these creeks are, he is to a certain extent no doubt correct. But if he refers to the other great rivers, the Nerbudda, Taptee, &c., the facts he states seem quite opposed to the theory. In this case all projecting points would be washed away, but the creeks would be filled up, as they would form still backwaters in which the silt would be deposited. The periods given as those of greatest

change are further not those of the heaviest discharge of water by the rivers. These changes are said to be most in June and November. It is, therefore, probable that the ordinary oceanic and tidal currents are the removing agents, rather than the scour of rivers.

There is further nothing to show that this destruction of land is not local, and on the whole of small importance, or that it is not compensated by a gain of land on the opposite or eastern shore of the Gulf.

The investigations suggested by the Bombay Geographical Society seem admirably adapted to determine this question of the alteration in depth and in contour of coast on the shore of the Gulf of Cambay. And there is no question that to arrive at any satisfactory results these careful soundings and surveys must be extended on either side of the points more immediately under investigation.

The second question of the depression of the Runn appears to me of very much greater importance. It is one concerning which the collection of accurate data is most desirable. It is more than probable that the few facts given in this article are only a small portion of what is known. But I must give a caution against admitting as conclusive evidence in favour of a general depression of the Runn from the single fact that the lands of one village, Bheemkutt, had been washed away. Such a case may very probably be due to local causes, and is not, taken alone, any proof of even a general encroachment of the sea, much less of a general depression of the land. I am by no means aware either that it is "universally admitted" that the Runn is an "upheaved sea bottom, upheaved by volcanic action!" Grant, who gave an admirable description of Cutch in 1837, did not think so, as he describes it is being filled by deposits brought by rivers. And Mr. Blanford, writing long before this article was submited to him, described it as "the bed of an inlet of the sea filled up by the accumulation of detritus brought down by the rivers. It is just at present in the debatcable state: water part of the year, land another part, but every year must increase the height of the land surface, and consequently diminish the depth of the water at the period of the overflow. Of course, the whole may be an area of depression, but further proofs of this are necessary than the fact of a small portion having been sunk (and another raised) by the earthquake of 1819."

To determine the facts as to whether a gradual secular depression is taking place in the Runn or not will need careful observations. The annual flooding of the Runn is stated to be caused by the sea being forced up the Gulf of Cutch and the more easternly mouths of the Indus by the South West Monsoon, the waters poured into the Runn by rivers being thus ponded back. If this be the case, it will certainly result that the depth to which the Runn is flooded during different years will vary with the intensity of the monsoon, and with the amount of the waters brought down by rivers. Observations, therefore, at that time of year would be worthless if used to determine any changes of level. To obtain any trustworthy results, I think it will be essential to erect fixed and solid marks—pillars of masonry with solid foundations—at intervals along the coast,

and in the neighbourhood of tidal creeks *as far within the Runn* as practicable; and an accurate determination of the height of a point upon each above *mean tide-level*. A very few of these would suffice if placed at well-selected points. I believe there is a party of the Topographical Survey at present engaged in Kattyawar who could without loss of time see that this was done. And the bench marks left by the Officers of the Great Trigonometrical Survey, while running their levels from Kurrachee, will always prove carefully determined and excellent points for comparison, wherever available.

But these evidences of a change in relative level of land and sea, derived from facts observed in the Runn of Cutch, are only a very small portion of similar facts which have been noticed elsewhere round the coasts of India. These occur almost every where, and along the entire coast, and for the most part they point to a rise in the land. This universality of the facts, however, reduces the questions now stated with reference to the Runn to form a very minor part of a very large and highly important inquiry. For the settlement of this, the establishment of a chain of points and fixed marks round the coasts of India, and the *accurate* determination of their height above mean sea level, would be necessary, and would be of the highest value to science. All buildings with good solid foundations which lie close to the sea shore would furnish means of fixing such marks. The several forts which protect the harbours round the coast, all the light-houses, harbour piers, &c., all these would afford capital points for the fixing of such marks.

I have spoken of the necessity of an *accurate* determination of the level of these points. It is an easy matter to determine with accuracy the difference of level of two fixed points, not far distant from each other. But in the present case it is necessary in the first place to fix one of those points before the relative level of the other can be ascertained. The exact line of mean sea-level must be determined. This can only be done by a series of observations steadily and systematically pursued daily for more than a month at intervals, or for a year if practicable. There is no real difficulty in the case; it only requires ordinary care, but this care continued for such a time as to eliminate the disturbing effects of local or temporary causes. Once determined, these observations need not be repeated again for several years, say ten, when the exact relative level of the fixed mark, as compared with the mean tide level, should be again determined.

It will be sufficient to prove the necessity for great care and accuracy to state that in every case in which such a secular change of level has been established, the change has not amounted to more than a few inches, or a foot or two, in a hundred years.

I would urge upon the Government of Bombay the establishment of such marks and the conduct of such careful observations at favourable points along the coast. A very long line of coast well exposed, with points admirably adapted for such observations, and the advantage of a noble harbour, ought to induce it to take the lead in such researches in India.

RESOLUTION.—Two quite different subjects, and the consequences of two quite distinct agencies, are included in the article of the *Bombay Saturday Review* and the letter of the Bombay Geographical Society.

2. The silting up of the northern and eastern parts of the Gulf of Cambay, caused by the large quantity of alluvial matter brought down by three large rivers, especially in the S. W. monsoon, when the waters of the Gulf are ponded back by southerly gales, and again the erosion of the eastern coast of Kattyawar, and deepening of the channels there caused by this large body of water having to escape by the western shore of the Gulf, have both been going on in historic periods. The effects of these agencies are evident,—the causes are not doubted.

3. But the elevation or subsidence of the Runn is a much more recondite subject; the facts must be established more accurately than they as yet have been; and the causes are not easily explained.

4. With regard to the Gulf of Cambay, the Government will be glad to adopt the suggestions of the Bombay Geographical Society, and have the surveys of the Coast and the soundings taken in such detail as the Society may approve.

5. But as to the more interesting question presented with the Runn, it does not appear to the Governor in Council that watching the line of coast now, or learning its past history, will give the requisite information as to the raising or depression of the land; for encroachments of the sea at one place and siltings up and recessions at others may arise, as is shown by Dr. Oldham in the case of the Gulf of Cambay, from many other causes.

6. The soundings recommended by the Geographical Society cannot be taken with the accuracy required for those observations, and must depend on the state of the tide varying both diurnally and periodically, and influenced by winds and seasons.

7. The mean level of the sea (in the scientific acceptation of that phrase) is the only reliable datum to which observations for changes in land level should be referred, and the only basis on which any good opinion could in future times be formed as to elevation or depression.

8. There should, therefore, be a course of accurate tidal observations taken through two lunations at a point on the south coast of Kattyawar, and also at a point as far into the Runn as possible to which tide has free access.

9. These should be referred to bench-marks made in permanent masonry pillars close to high water mark, and those marks should be connected to the nearest principal stations of the Great Trigonometrical Survey by careful levelling.

10. They will thus be connected with all the stations throughout the Runn and Kattyawar and with one another; and in future years if a change occur in the level of the Runn stations, this will be checked not only by the mean level of the sea, but by the southern tidal bench mark, which would not probably be subjected to any change.

11. Captain Haig, R.E., should be asked whether observations for mean sea level have been taken in this neighbourhood sufficient for the above objects; if not, what expense would be incurred to make them, and whether he would be good enough to undertake the duty.

12. On this being carried out, an accurate register should be prepared of the exact height of these tidal bench marks above mean level, and of the heights of the Great Trigonometrical station marks compared with them.

13. Copies of these should be kept by the Geographical Society and in the Secretariat, Bombay, as well as by the Geological Department and Surveyor General's Office, Calcutta, so that they may be compared with observations made in future years.

14. The Political Agents should be requested to order that these marks be preserved with scrupulous care.

Ordered that copies of the above be forwarded to—

The Honorary Secretary to the Bombay Geographical Society (by letter),
The Superintendent Great Trigonometrical Survey,
Captain C. T. Haig, R.E., First Assistant ditto.
The Superintendent Geological Survey of India,
The Surveyor General, Calcutta,
The Commissioner in Sind,
The Revenue Commissioner, N. D.,
Lieut.-Col. J. T. Francis, Survey and Settlement Commissioner,
The Political Agent, Kattyawar,
The Political Agent, Kutch,
The Political Department of the Secretariat,
The Educational Department of the Secretariat,
The Marine Department of the Secretariat,
The Superintendent, Guzerat Revenue Survey.

(Signed) H. E. Jacomb,
For Chief Secretary to Government."

5. And the following from the Right Honourable Sir H. B. E. Frere, G.C.S.I., K.C.B. :—

"To Lieut. Henry Morland,
Honorary Secretary to the Bombay Geographical Society.

Sir,—I had the pleasure before leaving Bombay to receive your letter of the 22nd February to the address of my Private Secretary, forwarding to me an extract of the proceedings of the Geographical Society at their Meeting held on the 21st February.

In begging you to express my thanks for the honour done me by the Resolution, I shall be obliged if you will assure the Society what great pleasure it will always afford me should I be able to further the Society's objects in any way in which the Society may command my services while in England.

I have the honour to be,
Sir,
Your most obedient Servant,

H. B. E. Frere.

P. & O. S. S. Malta,

The Red Sea, 15th March 1867."

Lieut. Morland then announced for the information of the Society that a Deputation, consisting of himself and Captain Robinson, Vice-President, waited on His Excellency the Right Honourable Seymour Fitzgerald, on the 28th March last, to solicit the honour of his becoming the Patron of the Society, and that His Excellency was pleased to accept the office.

The business of the Monthly Meeting having been closed, that of the Annual Meeting was entered on, and the following gentlemen were declared, from the Voting Lists scrutinized by the Committee, to be the Office-bearers for the ensuing Session of 1867-68 :—

Vice-Presidents.

1. Commander G. T. Robinson.
2. The Honourable George Foggo.
3. The Honourable H. Newton, C.S.

Resident Members of the Committee.

1. Dr. Bhau Daji, Hon. M.R.A.S.
2. J. P. Hughlings, Esq., B.A.
3. The Honourable Munguldass Nuthoobhoy.
4. Sir Jamsetjee Jejeebhoy, Bart, F.R.G.S.
5. Cowasjee Jehangierjee Readymoney, Esq.
6. Ráo Saheb Vishvanath N. Mandlik.
7. J. Burgess, Esq., F.R.G.S., M.R.A.S.
8. Thos. C. Hayllar, Esq.
9. Surgeon W. A. Shepherd.

10. Venayékráo Jugonnathjee Sunkersett, Esq.
11. James Taylor, Esq.
12. J. Connon, Esq., M.A.

Non-Resident Members.

1. Sir Alexander Grant, Bart, LL.D.
2. General G. LeGrand Jacob, C.B.
3. T. C. Hope, Esq., C.S.
4. His Excellency Rear-Admiral Geo. St. Vincent King, C.B., R.N.
5. Dadabhai Naoroji, Esq.
6. Colonel A. B. Kemball, C.B., F.R.G.S.
7. Colonel H. J. Barr.
8. His Excellency General Sir W. R. Mansfield, K.C.B.

Auditors.

J. Burgess, Esq., F.R.G.S., M.R.A.S., and Major J. T. Annesley, were appointed Joint Auditors of the Society's Cash Accounts for the past year.

Captain Morland then proceeded to submit to the Society the following brief Summary of the proceedings of the past Session :—

ANNUAL REPORT.

During the last Session the Society met four times, and the following were the papers read before them :—

1. Mr. Rassam's Mission to the Emperor Theodorus of Abyssinia ; account of events from 28th January to 22nd March 1866. Contributed by Government.

2. Report by Dr. Colvill on the progress of Cholera during the past season on the borders of the Persian Gulf, and an account of his land journey from Bushire to Lingah. By Government.

3. Copy of a letter from the Political Agent in Kutch, descriptive of a Collection of Ancient Coins of that Province, presented to Government by His Highness the Rao. By Government.

4. Report by Lieut. Colonel Merewether, describing the various places lately visited by him between Aden and Suez. By Government.

5. Copy of a Sketch Map received from the Political Resident at Aden, of the country passed over by the Troops during the recent

operations against the Foodlee Tribe, together with a copy of the descriptive remarks which accompanied it. By Government.

6. Copy of a letter from the Political Agent in Turkish Arabia and of an interesting Memoir (therewith submitted) on part of Mesopotamia situated between Sheriat-el-Beyta and Tel-Ibrahim, prepared by Lieut. Bewsher. By Government.

7. Report on the Physical Description of the country traversed by Lieut. Colonel Lewis Pelly, between Bunder Abbass and Cape Jusk, in 1864. By Government.

It is an unpleasant task to have to advert here to the want of interest evinced of late by the members towards the affairs of the Society. This cannot be better explained than by a retrospect of the Proceedings of the Society's Meetings held during the last Session, and the source from whence the communications read before them were obtained. The Society has not a single original communication to show from the pen of a member, in the list of the papers noticed above. This indifference on the part of the members towards the objects of the Society is very lamentable, and it is hoped that this appeal made in the interests of the Society will not fail to induce the members to take an increased interest in the proceedings, and to come forward with papers, to render the Meetings of the Society more interesting than they have latterly been.

The total number of Members on the Roll of the Society at the last Annual Meeting was 155. Since then there were admitted to Membership the following :—

1. R. L. King, Esq.
2. Surgeon W. A. Shepherd.
3. D. E. Gostling, Esq.
4. The Chevalier A. Thenon.
5. His Excellency General Sir Robert Napier, K.C.B.

Making a total of 160 Members. Against this, however, the Society has lost nine Members, of whom there have been removed—

By death—4.

1. Surgeon James Welsh, F.R.C.S.
2. E. P. Repton, Esq.,
3. Mirza Ali Jan, Esq.
4. Cornet T. J. Newnham.

By retirement from India—3.

1. Deputy Inspector General of Hospitals A. H. Leith, M.D.
2. Captain Sherard Osborn, C.B., R.N.
3. The Honourable C. J. Erskine, C.S., President.

By resignation of Membership—2.

1. Lieut. W. T. Crockett.
2. Limjee Manockjee, Esq.

In all 9 Members, leaving a balance of 151 Members at this date.

Surgeon James Welsh, F.R.C.S., of the Bombay Medical Service, joined the Society in 1862. He was Port Surgeon previous to his leaving India on Furlough in 1863, and took a great interest in the affairs of the Society. He renewed his connection with them after his return from Europe at the commencement of this year, but was prematurely cut off from the sphere of his usefulness on the 23rd January last.

Dr. A. H. Leith was admitted a Member of the Society in 1858—and was one of their Vice-Presidents at the time of his final retirement from India in February 1867. Dr. Leith's services in connection with Medical and Sanitary improvements effected in the Presidency during the last 25 years speak for themselves.

Captain Sherard Osborn, C.B., joined the Society in April 1865. He was elected one of their Vice-Presidents in May following, and was offered the Presidentship in December of that year. Captain Osborn's merits as a Geographer have been of a very high order, and are too well known to require any reiteration here. The Society held him in high esteem, and at their Meeting, held in November last, recorded the following resolution:—

"That Captain Sherard Osborn, C.B., R.N., F.R.G.S., be elected an Honorary Member of the Society for his most acceptable services in furthering the objects of the science of Geography, and his valuable contributions to the Library of the Society during his sojourn here."

The Honourable C. J. Erskine, C.S., joined the Society in April 1866, when the office of President was unanimously offered to him. He resigned it in March last owing to his approaching retirement from India. Mr. Erskine's name has been associated with the cause of Education in Western India. Though for a short time only at the head of the Society, yet he has been held in the highest esteem and respect for his great abilities, conscientiousness in the discharge of his duties, his extreme politeness and unostentatious habits, which admirably fitted him for the Presidential chair. In accepting his resignation the following resolution was unanimously passed :—

"That the Society receive with much regret the resignation of the Presidentship by the Honourable C. J. Erskine, C.S., on his proceeding to Europe, and desire to record their thanks for his services."

The following resolution, which was proposed by the Honourable Mr. Erskine, the then President, and seconded by the Reverend W. K. Fletcher, Vice President, was carried by acclamation on the retirement of His Excellency Sir Bartle Frere, at the Society's Meeting held on February 21st, 1867 :—

"That His Excellency the Honourable Sir Henry Bartle Edward Frere, G.C.S.I. and K.C.B., is entitled to the special acknowledgments and gratitude of the Society for the warm interest he has taken in furthering their objects, and the distinguished patronage he has extended to them during the period of his Governorship of the Bombay Presidency."

Copies of the reprint of the Sixth Volume of the Society's Transactions arrived here last year. The want of this volume was much felt, and it may be in the recollection of the Society that they are indebted to Sorabjee Pestonjee Framjee, Esq., for his acceptable benefaction for supplying this want.

Copies of the General Index to the contents of the 17 Volumes of the Society's Transactions transmitted by the Society's Agent in London two months back, are shortly expected to arrive here. The want of this most useful work was also greatly felt, and but for Mr. Bhugwandass Purshotumdass' munificent donation the Index could not have been compiled.

Five instalments of Books on account of the Cursetjee Furdoonjee Paruck donation have come to hand, and the final shipment of a few more books is shortly expected here. A separate case, similar to the one now standing in the Society's Rooms enclosing the Ross Testimonial, shall be ordered for the accommodation of this collection.

Rupees 1,980 have been subscribed on account of the Frere Portrait Fund. Of these Rs, 1,665 have been recovered, and the balance is under recovery. Early opportunity will be taken to give effect to the wishes of the Subscribers.

Of Mr. Premchund Roychund's donation of Rs. 5,000 the Committee have just sanctioned a portion to be applied for the general purposes of the Society. A complete series of Maps of the Trigonometrical Survey of India is also being obtained and mounted at the Education Society's Press, which will form a valuable acquisition to the Library.

The necessity of a fourth case, like the three already standing here, is much felt, as the Society's collection of books has very much increased.

A revised Catalogue of the Books received up to date has been compiled, and the manuscript is, this day, presented to the Society. It is Alphabetically arranged. Each book has been entered under two separate headings—one, the author's name; and the other, the chief word in the Title. The Catalogue printed in 1862 contained only one entry—the author's name—and was therefore defective for reference, as the author's name necessarily required to be known before the work could be found. The Catalogue will be printed at the Byculla Press, and will then be sent to London to be bound with the Catalogue of Maps, Charts, &c. which is being printed at Home. The principal credit for this Catalogue is due to the Clerk, Mr. Balvant Krishnaráo Pálekar, in whose hands the whole arrangement has rested—and as far as can be seen, great care seems to have been taken by him in the compilation. I have great pleasure in bearing testimony to the marked ability he has evinced in the discharge of his duties.

The eighteenth Volume of the Transactions of the Society is in the Press, and it is hoped that copies thereof will be placed in the hands of Members before the opening of the next Session.

It is a matter of great regret to add here for the information of the Society that the late monetary crisis, which has had such disastrous effects in the Mercantile as well as the general community of Bombay, has tended materially to affect the interests of the Society also; inasmuch as there is a large number of bills on account of Subscriptions yet to be recovered. There is however every hope of these arrears being recovered during the current year. The statement of the Society's Cash Account shows a handsome balance to their credit, but it must be understood that this balance includes several funds in trust with the Society for special purposes. There is very little balance available for the general requirements of the Society. I would therefore avail myself of this opportunity to impress on the members the necessity of their urging the claims of the Society on their friends, and inducing them to extend to it their patronage by membership. The Annual Subscription is Rs. 15 *only*. I trust that this appeal will meet with a ready response.

At the conclusion of the Report, the annual statement of Receipts and Disbursements on account of the Society from 1st May 1866 to 30th April 1867, submitted to the Society, showed a balance of Rs. 10,205-14-3 to their credit. In this sum were comprised the cash balances of the several donations in trust with the Society.

The Report submitted by the Secretary having been considered satisfactory, it was unanimously resolved to adopt the same, and the warmest thanks of the Society were voted to the Office-bearers of the past year. The meeting then adjourned to September next.

SESSION 1867-68.

FIRST MEETING.—*September 26th*, 1867.

The adjourned ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 26th September 1867, at 5 P.M.

Present.—Venayekrow Jugonnathjee Sunkersett, Esq., *Senior Member*, in the chair; James Burgess, Esq., F.R.G.S., M.R.A.S.; K. R. Kama, Esq.; J. Macfarlane, Esq.; Major J. T. Annesley; D. E. Gostling, Esq; Rao Saheb Vishvanath Narayan Mandlik, *Members*; and Lieut. Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary*.

The minutes of the last Meeting were read and confirmed.

Member proposed.—Alexander Gibson, Esq.

Copies of the General Index to the first 17 volumes of the Society's Transactions, combined with reprints of the Catalogues of the Books, Maps, Charts, &c., were placed on the table for the inspection of the Members. The Secretary reported that this work was undertaken by Mr. Kennelly on account of the benefaction of Bhugwandass Poorshotumdass, Esq.

Donations.—The following donations were then announced, for which the best thanks of the Society were voted to the donors:—

1. Journal of the Royal Geographical Society of London, Vol. 36. By the Society.
2. Proceedings of the Royal Geographical Society of London, Vol. XI. No. 2. By the Society.
3. Bulletin of the Geographical Society of Paris, for April and May 1867. By the Society.
4. Report of the Bombay Chamber of Commerce for the year 1865-66. By the Chamber of Commerce.
5. Report of the Schools of the Sir Jamsetjee Jejeebhoy Parsee Benevolent Institution for the year 1866. By the Panchayet of the Institution.
6. A Lecture delivered in the Town Hall, by the Rev. John Paton. By the Bombay Mechanics' Institution.
7. Annual Report of the Bombay Mechanics' Institution for the year 1866-67. By the Institution.
8. Index to the Acts of the Indian Legislatures from 1834 to 1866, repealed and unrepealed, Compiled by Raghoonath Damodhur. By the Compiler.
9. Bombay High Court Reports, Vol. III. Parts 1 and 2. By the Bombay Government.
10. Reports of Cases decided in the High Court of Bombay in 1863, 1864, and 1865. By the Bombay Government.
11. Title, Contents, and Index to Volume 2 of the Bombay High Court Reports. By the Bombay Government.
12. Bernard Quaritch's Catalogue of Books for sale. By the Publisher.
13. Memoirs of the Geological Survey of India. Vol. VI. Part 1. By the Government of India.

14. Selected Minutes of the Honourable Mountstuart Elphinstone in the Military Department. 1820—27. By the Bombay Government.

15. Irrigation Projects for the Bombay Presidency. Tank at Ekrookh, near Sholapore. By the Bombay Government.

16. An Account of the Talookdars in the Ahmedabad Zilla, by J. B. Peile, C.S. By the Bombay Government.

17. Report on Vaccination throughout the Bombay Presidency and Sind, for the year 1866. By the Bombay Government.

18. Deaths in Bombay during 1865. By the Inspector General Indian Medical Department.

19. Water Supply of Poona and Kirkee, Vol. II. with Plans. By the Bombay Government.

20. Project for the Completion of an ancient unfinished work known as Bhatodee Tank, in the Ahmednuggur Collectorate, with Plans. By the Bombay Government.

21. Papers relating to Maynee Project in the Khultan Talooka, with Plans. By the Bombay Government.

22. Papers relating to the Mitrow Canal, in the Eastern Narra Districts, Sind, with Plans. By the Bombay Government.

23. Results of the Magnetical and Meteorological Observations made at the Royal Observatory, Greenwich, in 1864. By the Royal Society of London.

24. Magnetical and Meteorological Observations made at the Government Observatory, Bombay, in the year 1864. By the Bombay Government.

25. Monthly Marathi Magazine, entitled "Vividh Dnyan Vistar." By the Publishers.

Letters.—The following letters were then read :—

1. From Captain Henry Van-Heythuysen; Narayan Daji, Esq., and F. King, Esq., withdrawing from the Society. 2. From Alexander Gibson, Esq., requesting to be admitted a Member of the Society. 3. From Sir Jamsetjee Jejeebhoy, Bart., thanking the Society for his being re-elected a Resident Member of the General Committee for the ensuing year. 4. From Captain W. A. Baker, R.E., Acting Under Secretary to Government, Public Works Department; C. Chambers,

Esq., Superintendent, Colaba Observatory; Mr. Rughoonath Damodhur, 2nd Assistant Judicial Department, Secretariat, forwarding donations for the acceptance of the Society. 5. From G. Norman, Esq., C. S., Acting Superintendent of Stationery, forwarding a parcel of books received from the Royal Society of London. 6. From the Manager of the "Vividh Dnyan Vistar," forwarding a copy of a Marathi Magazine, and requesting in exchange Reports of Discoveries, &c. of the Society. 7. From T. D. Thomson, Esq., 117, Cannon Street, London, requesting an early remittance for £204-3-8 in liquidation of his account with the Society. 8. From the Secretary, Royal Geographical Society of London, requesting an early remittance of the amount collected by this Society on account of the Speke Memorial. 9. From W. E. Frere, Esq., late President of the Society:—

"To the SECRETARY to the GEOGRAPHICAL SOCIETY, Bombay.

MY DEAR SIR,—I have just arrived in England, having completed the circumnavigation of the Earth, and my first intention was to comply with the wishes of the Geographical Society of Bombay, and sit for my portrait as they desired, but I cannot find any communication either to myself or to any other person as to the artist by whom the Society wish the portrait to be executed, the amount the Society wish to expend upon it, or to whom reference is to be made for payment. Had I possessed information on any of these points, I would, at once, have hastened to comply with the Society's very flattering wishes, and I shall therefore feel obliged by an early answer which will enable me to carry out my desire with as little delay as possible.

The Society will, I hope, command my services whenever I can serve them. A communication addressed to the care of Messrs. Forbes and Co. (of Bombay), 12, Leadenhall Street, London, will be sure to find me, and

I am, dear Sir,
Your obedient Servant,
W. E. FRERE.

42, *Clarges Street, London, 6th May* 1867."

10. From Major R. H. Keatinge, V.C., C.S.I., Political Agent, Kattyawar:—

"To The PRESIDENT of the BOMBAY GEOGRAPHICAL SOCIETY.

SIR,—With reference to the Resolution of Government No. 1692, of 27th August 1866, and to subsequent correspondence, I have the

honour to transmit, in original, reports from various officers of the Kattyawar Political Agency, regarding the encroachments of the sea on the shores of this Province.

2. Three years ago I was on the Runn, and was most anxious to ascertain whether it was rising or falling, but quite failed in collecting any data on the subject.

3. From the observations I have myself made, and from the balance of opinion expressed in these letters, I think we may believe that on the Western shore of the Gulf of Cambay and on the Kattyawar Coast at the head of the Gulf of Cutch, the sea is encroaching very considerably on the land, but whether this action is due to the set of the very violent currents which exist in both localities, or to the sinking of the land there is nothing to show.

4. On the Southern Coast, where the shore is rocky, and the currents of the open sea moderate, the sea appears, if any thing, to recede.

5. Captain Lloyd's detailed Revenue investigations in 1865 on the low lands at the mouth of the Bahadur River, near Nuvee Bunder, indicated an increase of the culturable area over the salt marsh.

6. I append also a printed copy of his report, which is, in the parts marked, geographically interesting.

I have the honour to be, &c.,

R. H. KEATINGE.

Kattyawar Political Agency, Rajcote, May 22nd, 1867.

'No. 25 OF 1867.

From Captain P. H. LEGEYT,

Acting First Political Assistant Southern Division, Kattywar,

To Colonel R. H. KEATINGE, V.C., C.S.I.,

Political Agent, Kattywar.

Dated 8th April 1867.

SIR,—In accordance with your Circular Memo. No. 15 of 1866, dated 11th September last, I have the honour to report that on the receipt of the same I took measures to procure the information required relative to the subject referred to by your Memo. The result of these inquiries on my part has been as follows:—

2. I am informed that the sea encroaches on the land up the creek at Berai Bunder, the most easterly port in my district, and which is in Babriawur under Joonagur.

3. From Jafferabad the information received is to the effect that the sea in the last 10 or 12 years has receded from the land about 15 feet.

4. The Joonagur authorities report that along the coast, at the following Bunders—

1.	Dhara Bhundor,	5.	Chorwar Bunder,
2.	Rajpoora ,,	6.	Maagrole ,,
3.	Nowa ,,	7.	Seel ,,
4.	Sootrapara ,,		

the sea has neither receded nor encroached on the land for years and years, but that at Verawul the sea has receded considerably, as where vessels of 1,000 candies, 50 years ago, could ride at anchor, now only those of 300 or 350 candies can with safety do so, and at a certain tower out in the sea is a rock more of which is now visible than used to be.

I have the honour to be,
Sir,
Your most obedient Servant,
P. H. LEGEYT, Captain,
Acting First Political Assistant,
Southern Division Kattywar.

Acting First Political Assistant's Office,
Camp Mendurda, 8th April 1867.'

'No. 27 OF 1867.

From Captain John W. WATSON,
Political Assistant Kattyawar, in charge Eastern Division,
To Major R. H. KEATINGE, V.C., C.S.I.,
Political Agent, Kattyawar.

Sonpurre, 20th March 1867.

SIR,—Agreeably to your Circular Memo. No. 15 of 1866, I have the honour to forward herewith all the information relative to the advance of the sea on the southern coast of Kattyawar that I have been able to obtain.

2. From the depositions of Memon Daood Bawa and Wanyo Veetuldass Veerjee, it will be seen that at Gogo the encroachment of the sea has been considerable. I can further testify from personal observation that subsequent to the appearance of the article in the *Bombay Saturday Review* a large portion of the Gogo sea-wall, almost exactly opposite Mr. Anding's bungalow, was beaten in by the violence of the waves. The said wall is of solid masonry, and is built on a receding slope so as to afford a maximum of strength. It will be also perceived from the two yads from Bhownuggur herewith appended, that a considerable quantity of land of their coast villages has been encroached on during the last few years, and further that the Bhownuggur and Soondrye creeks have been subject to a greater influx of salt-water. With regard to the truth of this latter statement, I would remark that during the tides of the Aka Treege of last year, the salt-water penetrated as far as the wooden bridge called the Kharee Bridge,

over the River Kalobhar, on the road between Sanglee and Chumardee, where it has never before been known to have reached in the memory of man. Further, it is well known to the residents of the villages situated near any considerable creek, that the creeks are enlarging, and that the influx of sea-water is increasing yearly. The inhabitants of the village of Maitta on the south coast, not far from Jhanj meer, showed me the devastation caused by the Buggur Creek which during the Aka Treege tides overflowed and washed away several fields. The Talooka of Wulleh is anxious to open a Bunder at Ghelree on the Bhownuggur Creek, a distance of at least six miles from Bhownuggur as the crow flies, and following the windings of the creek probably not less than 10 miles. There is a legend prevalent throughout the Gogabarrah District that Perim, where Mokhera Gohel had a Fort, was formerly connected with the mainland. This does not appear to have been impossible. There is also a legend that vessels used to be able ages ago to ascend the Bownuggur Creek as far as Chumardee.

3. I forward herewith a tabular statement showing the height attained by the tides of the full moon and new moon, at Bhownuggur Mhowa and Kutheewuddur, on posts specially fixed for the purpose, but I need hardly say that observations taken for so limited a period of time are useless in themselves, though if taken at new moon and full moon every month for a series of ten or twenty years they would be extremely valuable.

4. When I visited the Runn in 1865-66 I observed that although there can be little doubt that the extent of water in the Runn was formerly at some remote period of time very much greater than it now is, yet that this water appears to have gradually receded owing to oscillations in the level of the Runn, and it seems to have reached its lowest point about the middle of the last century. At all events since that time the Runn appears to have again commenced to sink, and the sea water consequently to penetrate further and further eastward, and to cover a larger extent of Runn during the hot season and the rains, *vide* McMurdo's report to Government dated October 2nd 1815. Since then the level of the Runn has continued to be gradually depressed, and the sea-water each year covers a larger extent of territory. In proof of this, when I was at Balumba, in the end of 1865, the villagers told me that formerly, even within the memory of man, there was a footpath across the Runn from Balumba to Toona in Kutch, but that the gradual advance of the sea had closed this pass. Close to Balumba is the village of Bheemkutta under Amrully. The frontier of this village was defined by Colonel Rigby a few years ago; since that time several acres belonging to Bheemkutta have been over flowed by salt-water and become Runn. The whole of the inhabitants of the southern shore of the Runn state that the sea is advancing rapidly. I believe the southern shore to be the very best place for investigations to be made as to whether the level of the Runn is being raised or depressed. Ten years' observations here would set the question at rest.

5. My opinion is that at some remote period of time the level of Kattywar was depressed considerably lower than it now is, and the present appearance of the Runn and the Bhal confirm my supposition. Any unprejudiced observer

examining the Runn and the Bhal, or low flat salt-land between the Null and the Gulf of Cambay, must perceive that the sea has but comparatively recently withdrawn from it, and that formerly Kattyawar was an island. I consider that a period of upheaval followed the period of depression, and that now another period of depression has commenced. At the present day, in a heavy rainy season a light canoe might be paddled from the Runn of Kutch to the Gulf of Cambay, or nearly so. My reasons for supposing that a period of upheaval followed that of depression are that while we see that the sea is yearly encroaching both in the Runn and on the Southern coast of Kattywar, we yet see that the extent of Runn and Bhal that must have at one time been covered by salt-water is very considerable, and probably at least three centuries will be required at the present rate of depression to restore the Runn to its pristine condition of an inlet of the sea. The earthquake at the commencement of this century, which formed the Lake Sindree had doubtless an important effect on the Runn, and the slight shocks experienced in late years have no doubt been tending to the same object, viz. a general depression of level.

I have the honour to be,

Sir,

Your most obedient Servant,

JOHN W. WATSON,

Political Assistant Kattyawar, in charge Eastern Division.'

'TABULAR STATEMENT *showing the measurement of the Tide during the years Sumvut* 1922-23, A.D. 1866-67.

MONTH AND DATE.	Bhownuggur.		Mhowa.		Kuthee-wuddur.		REMARKS.
1866.	F.	I.	F.	I.	F.	I.	
October 8th, Bhadurwa Wudh 30th...	14	6	9	8	7	8	
„ 23rd, Asso Soodh 15th	16	0	9	7	10	0	
November 7th, Asso Wudh 30th ...	14	0	6	1	5	9	
„ 22nd, Kartick Soodh 15th...	17	0	10	4	8	5	
December 7th, Kartick Wudh 30th...	13	3	7	5	9	2	
„ 21st, Magsur Soodh 15th...	18	7	10	2	9	8	
1867.							
January 5th, Magsur Wudh 30th.....	13	0	7	3	7	4	
„ 20th, Pose Soodh 15th	18	3	10	3	9	8	
February 4th, Pose Wudh 30th.....	13	6	7	3	7	5	
„ 18th, Mha Soodh 15th	15	3	7	3	7	0	
March 6th, Mha Wudh 30th	14	4	7	0	7	2	

JOHN W. WATSON,

Political Assistant, Kattyawar, in charge Eastern Division.

Sonpurree, March 20th 1867.'

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'*TRANSLATION of Statements made by* MEHMON DAOOD BAWA, *aged* 70 *years, and* WANYO VEETULDASS VEERJEE, *of Gogo, before Captain* WATSON, *Political Assistant, Kattyawar.*

There is a Mussulman shrine on the sea shore by the name of Peeran Peer, to the north of which is the shrine of Khadur Meera. From the Peeran Peer shrine to the southern corner of my bungalow on the sea shore, a sea-wall has been erected; formerly this wall was not built. From this wall seawards for about 40 or 50 paces there was a Mahomedan burial-ground, but when the sea began to encroach the stones of these tombs began to be washed away. Some of these stones were used in erecting the masonry abutment round the shrine of Peeran Peer, and some were used in marking the sea-wall. This wall has been several times broken down in places from the violence of the sea, and it has been repaired. The waters of the sea cannot injure the town on account of this wall, but the sea is still steadily advancing. In proof of this I may mention that formerly there were Mussulman tombs at the distance of about 40 or 50 paces from the sea-wall seawards and in a spot now daily covered by the sea water at high tide. These tombs are now all washed away by the advance of the sea. Besides this there was a tamarind tree and a large tomb on the east of the southern corner of my bungalow, close to the sea-wall on the seaward side, where the salt water now reaches. This tomb was washed by the high tides, and the tamarind tree fell down five years ago. The land towards the east of my bungalow was washed away by the high tides, and an iron bar 12 feet long and 6 inches square, was found in it, and the bar was handed over to Government. A quay was afterwards made on that place and there is a tamarind tree there. To the north of this spot a bungalow was built by the Collector, Mr. Roll, and on the east of this bungalow there is a quay, and there was formerly a neem tree with a masonry abutment round it, at the distance of about 40 or 50 paces seawards from this quay, in a spot now daily covered by sea-water. This tree, together with the masonry abutment, was washed away by the waters of the sea. On the east of this neem tree, at about the distance of a hundred paces, there was a base of a Khotha. This Khotha is said to have been erected by Ahmed Khan, Nawab of Cambay. We took some of the stones from the foundation of this Khotha to erect the masonry abutment to the shrine of Peeran Peer, and the remainder of the foundation is still there. To the north of the Collector's bungalow there is a Cotton pressing machine belonging to Hutteesing, and the quay is erected in front of this. On the north of this quay there was a lamp-post and a house for the Police guard; this house was always much damaged by the violence of the sea-water. It was therefore removed by Mr. Wood, the Engineer, last year, and was erected on the road further inland and the lamp-post was placed on the corner of Hutteesing's quay. On the south of Peeran Peer, there is the Fishermen's quarter, and on the sea shore there is a Musjid. To the south of this Musjid there is a Khotha on the town-wall, and the Mussulman burial-ground is on the south of this

Khotha. South of this again is the place where the Hindoos burn their dead. Between the Musjid and the town-wall there is an outer wall, and there was a bank of earth towards the sea for about 20 or 24 paces. This was washed away by the sea, and the water now reaches as far as the base of the wall. There is a burial-ground near the Khotha, which is gradually being washed away by the violence of the sea waves. The shrine also of the Peeran Peer is being washed away. There was a village and two tanks established by Mokhera Gopal, in the island of Peerum. The village has been buried in the sand, and at present there are only 10 or 12 huts of Kolees on the margin of the bank, and there was a fort round Peerum, but it fell down many years ago.

(Signed) MEEMON DAOOD BAWA (with his own hand).
(Signed) VEETULDASS VEERJEE, inhabitant of Gogo, aged 57 years (with his own hand).

Dated September 19th 1866.

(True Translation).

JOHN W. WATSON,
Political Assistant Kattyawar, in charge Eastern Division.'

'*TRANSLATION of Deposition of* NUTHOO JASOOB, *by caste Ganchee, by religion Mussulman, by occupation Superintendent of Masons, Resident of Gogo, aged* 55 *years, taken before* C. ANDING, *Esq., Secretary to the Gogo Municipality, at Gogo, September* 28*th* 1866.

Mr. Anding read over to me the statement made by Daood Bawa and Veettuldass Veerjee. I say that what I know is in accordance with their statement. The sea encroaches townwards, and if there was no sea-wall the bungalow of Mr. Roll, the Collector, and other buildings, and also the Mussulman burying-ground would have been washed away by the waves of the sea. There is a Khotha called Mussanis (on the town wall); the waves of the sea formerly used to, at high tides, stop short 50 paces off this tower, but now the waves dash against this Khotha at high tides, and wash away the soil on the western face of this Khotha, and also the bank of earth which is there is being washed away. Thus the sea encroaches. There was a lamp-post on the sea shore, which was washed away by the waves, and a new one is erected on another spot; there was also a house for the Police guard which is removed now further inland on account of the violence of the waves. There was a neem tree near the Police-guard-house, which was washed away by the sea waves in June last. I am also of opinion that if the wooden palisade made by the Engineer Saheb be not joined on to the wall in front of Huteesing's bungalow that the sand on the Bunder will be all washed away, and that the sea will encroach further towards the town.

(True Translation).

JOHN W. WATSON,
Police Assistant Kattyawar, in charge Eastern District.'

'My Dear Sir,—Having read the accompanying Translation made of the depositions of Daood Bawa and Vittuldass Veerjee, I believe it to be perfectly correct, from what I have heard and seen. When I came here in September 1858 I saw (to the best of my recollection) the tamarind tree standing, and was subsequently washed away by the violence of the sea waves. The surface of the sea-wall or quay has been repeatedly battered in, although it is so built as to present to the sea waves an incline or oblique surface; had it been perpendicular the cost of keeping it in repair would have been great.

2. The mound of earth projecting out from the town wall in the direction of the fishermen's quarters has been and still is gradually disappearing, indeed there is very little of it left. I append copies of the reports made by myself and the Karcoon of the Municipality requesting sanction for the repair of this portion of the wall, the first being dated so far back as the 11th July 1862, and the Mussulman burying-ground to the south of the southern Kotha of the town wall, is also being washed away, in proof which the skeletons of the bodies in some of the graves are lying to some extent exposed, and others completely washed away. The Hindoos, who burn their dead at the "Musson" which adjoins this burial-ground, declare, that a great portion of the ground or space lying before the building where they sit to watch the cremation of the bodies committed to the funeral pile, has been considerably washed away by the sea waves, thus leaving them but 10 paces of ground between the mark of high spring tides, and the buildings referred to. These are circumstances and truths which go clearly to show that the sea is steadily and perceptibly encroaching.

3. The Bunder of Gogo, since my coming here, has considerably diminished in size, as to the north of Hutteesing's quay stood the old "Chowkee," and a little lower down the Bunder light, but both were obliged to be removed, as stated in the deposition, from the advance of the sea. During the last high spring tides of June the whole surface of the Bunder was submerged, a neem tree near the new Chowkee washed down, and unless Col. Bell's plan of carrying the wooden shield right round the margin of the bunder to join the sea-wall is carried out, the whole of the remaining portion of sand now on it will, I fear, be washed away.

4. I also beg to append the deposition of Nuthoo, Sub-Overseer in the Public Works Department, who was formerly and for years the Mistree of the Gogo Municipality. This statement of his goes to confirm to a considerable extent all that has been said above on the subject of the encroachment of the sea on the western coast of the Gulf of Cambay.

Yours very obediently,

C. Anding,
Secretary to the Gogo Municipality.

Gogo, 28th September 1866.

(True Copy).

John W. Watson.'

'No. 40 of 1867.

From Captain H. T. Hebbert,
Political Assistant, Western Division, Kattyawar,

To Colonel R. H. Keatinge, V.C., C.S.I.,
Political Agent, Kattyawar.

Rajkote, 8th April 1867.

Sir,—I have the honour to reply to your Circular Memorandum, No. 15 of 1866, dated 11th September 1866, referring to an extract from the *Bombay Saturday Review* of the 18th August 1866, on the Geological Action on the south coast of Kattyawar and in the Runn, with Resolution No. 1692 of 1866 by the Government of Bombay.

2. Much has been written on the general subject of the oscillations in the level of the Runn by Captain Grant of the Engineers, Fuljames, Le Grand and John Jacob, and many papers referring to it will be found in the Transactions of the Bombay Geographical Society, and in the Journal of the Royal Asiatic Society Bengal, chiefly from 1830 to 1840, and in Burn's Travels, Dr. Burn's Mission to Scinde, and Lyell's Principles of Geology.

3. The only point however, for my present consideration, as relating to the District under my charge is, whether the Runn is being yearly depressed and the rate of such depression, if it exists.

4. Before referring to the volcanic agency supposed to be still influencing the Runn, I will mention the facts which I have been able to ascertain, for the depression or elevation of the Runn is clearly a question of fact, and to be determined only by observation.

5. H. H. the Jam of Nowanuggur, and the Thalkoors of Morvee and Mallia, placed at my disposal Methas to make observations. These officers, particularly the one sent by H. H. the Jam, have visited the coast and islands on the Kattyawar side of the Gulf of Cutch, as far north as Teekur, and have supplied me with such information, as in six months they have been able to collect.

6. The Runn, as often before described, is an extensive sandy flat with well defined boundaries, lying on a lower level than the surrounding country, and very little above the level of the sea. It is devoid of vegetation except on the elevated ridges alluded to in Captain McMurdo's report on the Province of Kattyawar, dated 2nd October 1815.

7. This tract of country is annually covered by the sea, which is simply blown up upon it by the force of the South-west winds.

8. In March the sea commences to flood the Runn on the Kutch side to an extent of about 2 miles and to a depth of from 2 to 2½ feet. In April the Runn is covered as far as Teekur to a depth of 1, 2, and in some places 4 feet, and during the violence of the Monsoon, when the Looree, Bunnass, and other countless streams pour in their floods, the depth increases in some parts to 10 and

12 feet, a vast lake being formed, extending far away inland, and not unfrequently, when the rivers are much swollen, connecting itself with the Null to the south, converting Kattyawar for the time being into an island.

9. Captain Grant, in writing of the Runn in his very able papers on the Geology of Kutch, dated 31st December 1836, describes it as "perhaps unparalleled in any known part of the globe, as it may be said to be placed on a level between land and water," and certainly it appears to me that the chief peculiarity of the Runn is that it thus retains its level, year by year, considering the sea of waters that so continually sweeps over it, entering and flowing off as we can easily conceive with no insignificant force.

10. As far as my observations have enabled me to determine, I am decidedly of opinion that no perceptible change has occurred in the actual level of the Runn for many years, and that the supposed subsidence, which has attracted the notice of the writer in the *Bombay Saturday Review*, is merely the result of changes which have occurred, and which must occur at the entrance of the Runn from the annual scour to which it is exposed.

11. From interrogating the inhabitants I am satisfied that no depression, at least on the southern side of the Runn, has been observed by them.

12. It appears to me that were a gradual depression taking place over the entire Runn caused by volcanic action, we might expect to find evidence of such changes in the interior of the Runn, and large lakes would remain after the subsidence of the flood, which would increase in extent from year to year.

13. Many such lakes have from time immemorial existed in the Runn, but in spite of the strictest inquiry, I have heard of no instance of these lakes being materially increased or fresh ones having been formed; on the contrary some of them have, if anything, become diminished.

14. I directed minute inquiries to be made with a view of ascertaining whether the level of water in the village wells near the coast, is approaching nearer the surface or not; as this appeared to be a practical mode of ascertaining whether the neighbourhood of the Runn is undergoing depression; and the result of these inquiries satisfied me that such is not the case.

15. Failing therefore to discover any foundation for the statement that the Runn was undergoing a yearly depression, I directed my attention to the Gulf of Kutch and entrance to the Runn, and here it was apparent that many of the creeks and channels had undergone considerable change.

16. The whole coast of Kattyawar in the Gulf of Kutch, north of Nowanuggur, is formed by thick banks of mud and marsh, and mangrove swamps, washed up, and accumulated from the, at all times, muddy waters of the Gulf; over these marshes the tide is continually ebbing and flowing, and they are subject to the changes noticed before as occurring in the Runn from the sea being forced up by the south-west wind.

17. It is not therefore to be wondered at that the inhabitants, who live near the coast, have observed no particular changes, and when questioned merely state

that some years the sea advances further in the swamps than in others. The only information I found to be obtainable was from boatmen who frequent the navigable creeks.

18. The first of these creeks is the one mentioned by the writer in the *Bombay Saturday Review*, the Wowania Creek, in which native vessels of considerable tonnage can pass more than a mile beyond the former anchorage.

19. The next, a few miles to the south-west, is the Jhinjoora, a port of Nowanuggur, in which it is reported that boats can approach 1½ miles further than they were able to do 20 years ago. The Bunder in this creek was formerly at a spot called the Sooeewals Ness, whereas now it is some distance up the creek. In this, however, one fact is worthy of notice, viz. that although a sufficient depth of water for vessels to pass extends further inland, the depth at the Sooewals Ness has scarcely increased at all.

20. Again, still further to the south, between Balumba and Jooria, the river Dadhialee flows into the Gulf, and it has been noticed that this river has of comparatively late years swept away great quantities of sand and deposit from its mouth, which is by this means considerably widened; consequently in the hot months, when there is an increase of water in the Gulf, the sea entering the channels thus formed, spreads over the low sandy level around, to a much greater extent than in former years.

21. No changes have been noticed in any other creeks or on the coast west of Nowannggur, though an agent was specially sent to make inquiries at Sureya Pindora and the island of Adjar.

22. Neither have any changes whatever been noticed along the south-west coast of Kattyawar, Mecanee, Porbunder, Mangrole, &c.

23. The result, therefore, of my inquiries along the coast has only brought to notice that the degrading action of the Wowania streams and the Demee, Fooljur, and Dadhialee rivers have immaterially increased the length and depth of the muddy creeks, into which they pour themselves.

24. There are certainly some popular traditions, such as that in past ages there was a footpath from Jooria to the opposite bunder of Poona in Kutch. Also a report that some stones which rise up four miles to sea in front of Ballacherry (the usual resort of Europeans in the hot weather) are the remains of a temple to Shiva. But for my own part I do not place credence in these reports which are unsupported by evidence of any kind.

25. The writer of the article submitted for report unhesitatingly declares his belief that the Runn is undergoing a gradual depression, and affirms that this is undoubtedly caused by volcanic action, and not by the eroding action of the tide.

26. That the Runn has been subject to *occasional* volcanic action is assuredly the case, but that it is now being gradually sunk by this action is very questionable. If a course such as this were affecting a large tract of country with an area of upwards of 7000 miles, it would not be unnatural to look for repeated

and constant indications of a volcanic nature; but this is far from being the case, and from inquiry I am convinced that earthquakes are as little frequent on the Runn as in any part of India. It must, however, be remembered that I have only had opportunity of questioning the inhabitants on the Kattyawar side of the Runn. The igneous nature of Kutch on the opposite side is well known, and earthquakes may be more frequent there, still I consider that the very fact of earthquakes being almost unknown on this side of the Runn, even if they should be felt on the opposite coast, goes far to prove that the Runn itself is not the centre of their action.

27. The only earthquake of importance which has been noticed in the Runn occurred in the year A.D. 1819, and was described by Captain Grant. This earthquake is reported to have rent the deep chasm in the Runn, now known as the Chas, opposite Junghee, which terminates the Gulf of Kutch, or rather connects it on the Kutch side with the Runn. This channel is constantly being enlarged by portions from the sides falling in and being carried away by the tide; and vessels safely proceed where previous to 1819 they were unable to find a road.

28. It has hitherto been the common impression that the Runn was rising rather than lowering its level, and this impression was shared by Captain Grant, and unquestionably this is what we would expect from the operation of the volcanic agency believed in by the writer in the *Bombay Saturday Review*, such agency being calculated to elevate rather than depress. But the gradual rise of land is so slow a process that it would be a most difficult matter to ascertain.

29. It requires more than the mere fact of some alluvium here and there being recaptured by the sea to prove that the Runn is undergoing a gradual depression. It is a question of levelling, and the only way that suggests itself to me, should Government desire further and more accurate information on the subject, is that a qualified Officer be appointed for a few months to superintend the placing of some long lines of level, which should be run out from some fixed elevation on the mainland of the Runn. Permanent bench-marks should be fixed at regulated intervals, and any changes of level by these means ascertained a stated periods.

30. After all if it should be the case that volcanic action is inducing subsidence now who can promise that the same action will not re-elevate the Runn and its neighbourhood at a future time.

31. Altogether I do not think that the article submitted for report from the *Bombay Saturday Review*, the facts of which are somewhat doubtful, and the speculations crude, need cause the Government any anxiety, at any rate, as far as relates to the Runn on the north side of Kattyawar.

I have the honour to be,
Sir,
Your most obedient Servant,
H. Hebbert,
Political Assistant, W.D.'

'No. 58 of 1867.

From The Acting First Political Assistant,
To Major R. H. Keatinge, V.C., C.S.I.,
Political Agent in Kattyawar.

Rajkote, Wudwan Station, 4th March 1867.

Sir,—With reference to your Circular Memo. No. 15, dated the 11th September 1866, on Government Resolution No. 1692, dated the 27th August 1866, on the subject of the supposed sinking of the Runn of Kutch, I have the honour to forward for your information two forms of register which I have directed, with the consent of the Commissioner of Customs and His Highness the Raj of Drangudra, K.C.S.I., to be kept by the Sircarcoons at Patree, Jhinjoowarra, and Unverpoor, and the Raj Carcoons at Teekur and Kopurnee.

2. The post A, referred to in the forms, is or will be fixed at each station, 100 yards from high tide mark, and post B so as to be partly covered by the water at high tide. The sea does not reach the customs stations except sometimes in the rains. The posts at these stations will therefore be fixed after the beginning of the monsoon.

3. The registers are to be kept for lunar months.

4. The carcoons have been directed to note when the Teekur, Khar, &c, passes are practicable for passage across the Runn, and when closed, and to note also the dates of any volcanic shocks.

5. Their registers will be annually compiled in my office; and the result of their observations communicated to you. I do not suppose that if the Runn is really sinking or rising any appreciable fall or rise would be apparent for many years.

I have the honour to be,
Sir,
Your most obedient Servant,
Mukund Rae M.,
For First Political Assistant.'

'MONTHLY REGISTER for Post A at

Distance of Post from high tide.	Poonum.	1	2	3	Amas.	1	2	3

MONTHLY REGISTER for Post B at

Height to which water rose on post.	Poonum.	1	2	3	Amas.	1	2	3

Mukund Rae M.,
For Acting First Political Assistant.'

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'From MUKUNDRAE MUNEERAE, Esq.,
First Extra Assistant Political Agent,

To H. M. BIRDWOOD, Esq, M.A..,
Acting First Political Assistant.

Wudwan, 6th October 1866.

SIR,—With reference to the Resolution of Government in the General Department No. 1692, dated the 27th August last, a copy of which has been forwarded to me under your endorsement No. 205, dated 18th ultimo, I have the honour to inform you, on my making inquiries at Bujana and other places as regards any marks which would indicate a depression of the land in the Runn, everybody seemed to be quite amazed at the idea, which showed that persons in that locality were quite ignorant of the matter.

The tides of the sea have never been known to have risen so high as to reach Bujana, and the creek at that place is wholly dry during the eight months of the year.

The tides in the Runn are said to be the highest whenever there is strong wind blowing, and in the months of May and June they sometimes reach Jhinjoowara. The people there seemed to be of opinion that the tides depended more on the blowing of the wind than on any other cause.

All along the Runn within our Division there are saltworks at different places, such as Patree, Odoo, Jhinjoowara, Futtepoor, and Unvurpoor. If the Government Mehtas employed on these works be directed to keep the required registers they will be able to perform the work more efficiently than any Mehtas employed by the Talookdars. Teekur is the only place within our Division where there are no such Saltwork Mehtas, and where I think it is necessary to have a similar register kept; but I have no doubt His Highness the Raj of Drangudra, within whose territory Teekur lies, will readily consent to entrust the work to one of his own men at that place.

The Bujana Chief expressed to me his willingness to render every possible assistance in his power, but, as stated above, his assistance will not, I am of opinion, be required.

I have the honour, &c.,

(Signed) MUKUND RAE M.,
First Extra Assistant, Political Agent.

(True Copy)

C. B. LATOUCHE,
First Extra Assistant Political Agent.'

'No. 93 of 1867.

From Captain C. B. LaTouche,
Acting 4th Political Assistant,
To Major R. H. Keatinge, V.C., C.S.I.,
Political Agent in Kattyawar, Joonaghur.

Camp Rajkote, 29th April 1867.

Sir,—In continuance of the correspondence connected with the rising and sinking of the Runn, and in compliance with your private letter of 7th March, a second communication was addressed to the Thandar of Jhinjoowarra, who, in reply, states that the *Runn does* increase on the cultivated land, which gradually becomes covered with salt and sand. The information however obtained from him is very scanty, and I have been as yet quite unable to discover from any of the authorities of the villages in the neighbourhood of the Runn, to whom letters have been addressed on the subject, whether the sea water actually advances or not.

They all seem to imagine that the water which lies on the Runn, especially after a heavy monsoon, is rainwater. I have put some further questions to them, and hope at a later period of the year to be able to furnish some more precise information from their replies, and the registers ordered to be furnished monthly by them.

I have requested the Raja of Drangudra, chief of Bujana, and Thandar of Dussara, to note particularly any changes which may take place during the rains; as also on the two undermentioned points:—

1st. Whether the water in the wells have been increasing or decreasing of late years *during the dry season.*

2nd. Whether the water in the wells during the monsoons has of late years become more brackish or not?

I have the honour to be,
Sir,
Your most obedient Servant,
C. B. LaTouche,
Acting 4th Political Assistant.'

'*EXTRACT paras.* 18 *to* 28 *of the Report by Lieut.* J. H. Lloyd, *Assistant Political Agent, on the separation of interests in the Border Villages held jointly between the States of Joonaghur and Porebunder.*

Natural Features and Soils.

Position of Villages.

18. The villages held jointly by Joonaghur and Porebunder occupy a position intermediate between the Khalsa territories of the two states. They comprise a tract of country lying nearly parallel to the western coast of Kattyawar, and removed from it only by a narrow strip of territory belonging to Porebunder.

19. From the foot of the Burda hills, which are situated a few miles to the north, the land has a gradual fall until it meets the river Bhadur, which, rising in the interior of Kattyawar, flows, in a westerly direction through the joint districts, and joins the sea at Nuvee, a Porebunder town on the coast.

The River Bhadur.

20. To the south of the Bhadur the country exhibits a uniform low level, falling again at the extreme south, where it joins the Ghair, a low-lying district, which is under water for several months in the year.

The Ghair.

21. The joint districts as already mentioned are separated from the sea by a strip of Porebunder territory. Owing however to the Bhadur being tidal for some miles, and the lowness of its banks, a large amount of salt water finds its way over this intervening tract at every flow of the tide. During the rains, the flooding of the river, the high monsoon tides, and the bursting of the sea through the sand hills which line the coast, convert this tract of country into an extensive salt marsh or Runn, and may thus, as far as the ill-effects are concerned, be said to bring these joint districts into immediate proximity with the sea.

The Runn.

22. Owing to the prevailing low level of the country, together with the above proximity of the sea, one of the principal features of the district is its saltness. Salt water percolates from below, fills wells and streams, impregnates the soil, and occasionally appears as an efflorescence on the surface; and is, in short, the normal condition of the country, which, without counteracting influences, would soon become uninhabitable.

Saltness of the District.

23. The yearly rains are of course one of the causes which fertilize the country. They sweeten the soil, and supply fresh water to the inhabitants; but, without other assistance, these beneficial results would be but temporary.

24. The event upon which the welfare of the northern portion of these districts greatly depends, is the annual inundation of the Bhadur and its tributaries, by which the country on both banks is flooded for several miles. This may happen once, twice, or even three times during the monsoon; and the vast volume of water thus thrown on the land sinks to a great depth, displacing the salt and thoroughly sweetening the soil for cultivation, besides filling tanks, wells, and streams with fresh water.

Inundation of the Bhadur.

25. The constant antagonism between fresh and salt water in these districts is a most curious feature, and serves to show what the condition of the country would be if by any means the yearly flooding of the river were to be averted. The fresh water poured over the country by this means not only allows crops to be cultivated during the rainy season, but the streams and nullas retain their sweetness long enough to allow cold weather crops to be raised by irrigation.

With the commencement of hot weather however evaporation takes place, and as the heat increases, the salt water again begins to percolate from below,

and rapidly re-asserts itself until cultivation is stopped by the streams becoming first brackish, and finally salt. The villages situated nearest the coast are the first to feel the effects, but it gradually extends to those more inland, until, by the middle of the hot weather, the greater part of the district has relapsed into its normal condition of saltness, and great difficulty is frequently experienced by the inhabitants in obtaining a supply of water for household purposes. If the district were dependent on the rain-fall alone this difficulty would become serious, at the same time the gross produce of the land would be considerably diminished.

Banks of the Bhadur. Effects of the Inundation.

26. It must not be considered however that the inundation of the Bhadur is without ill effect. Like all rivers liable to violent floods, and flowing through level plains, the Bhadur is the cause of much mischief. The fields along its banks are yearly more or less encroached upon, to the great loss of their cultivators; and occasionally the river will quit its bed and cut a new channel for itself, engulfing in its progress valuable lands, and completely ruining the owners. Again, the effects of the inundation upon the surrounding country are most capricious. Sometimes, when the flood subsides, large quantities of alluvial soil are found deposited over the surface to the great advantage of cultivation, and barren spots are suddenly converted into fertile fields; at other times, the violence of the flood is so great that the deposit of many preceding floods is in a moment swept entirely away, and the thriving cultivator finds himself reduced to the ownership of a barren waste: again, these floods, by taking place at unexpected and unseasonable times, occasionally inflict considerable loss by damaging growing crops.

27. Thus, for good and for evil, the inundation of the Bhadur is yearly awaited by the people of these districts; but whilst the damage it commits is partial, the benefit is great and general.

The Ghair.

28. To the south of these joint districts is another curious feature in the shape of a tract of country, already alluded to as the Ghair. The extensive sand-hills which line the coast protect this portion of the district from any irruption of the sea; but the level of the country is so low, that throughout the monsoon months it is more or less under water, and cultivation is chiefly carried on in the cold weather, after the water has subsided, and in the hot weather by means of irrigation.' "

11. And the following from James Burgess, Esq., F.R.G.S., M.R.A.S.:—

"To H. Morland, Esq, F.R.G.S.,
Honorary Secretary, Bombay Geographical Society.

Sir,—I beg leave to call your attention and that of the Bombay Geographical Society to a matter in which the Society might lend valuable aid to the cause of Science.

The inextricable confusion in which neglect and indifference have involved the spellings of Indian names of places, render it often a matter of difficulty for a stranger to India to find the place he wants either on a map or in a Gazetteer. Every one seems to have a way of spelling of his own. Ramnagar is spelt about eleven different ways in Thornton's Gazetteer, and the prefix *Fateh* is spelt eleven ways, all wrong; *garh* is spelt *ghur* in one line, *gurh* in another, and *gur* in a third; "pur" is spelt *poor, pore, pour, par, pora,* &c. A few months ago I met with *Peenee Put* in a newspaper, and could only guess that Panipat was meant. Kanhpur is the city of Krishna,—in one author it is *Cunpoor,* in another *Caunpoor,* and in Orme *Cawnpore,*—apparently intended for "Khanpur"—a Musalman,—in place of a Hindu name,—and scores of instances of the same kind, whereby the etymology is completely disguised by the mis-spelling, might be adduced by one acquainted with the country.

From this multiplicity of spellings, certain forms become for a while fashionable, and then give place to others: thus, thirty years ago, our best maps had *Cashmeer, Curachee, Baroche, Boglipour, Nassuck, Mow, Churapoonjie, Rutnageeree, Thenkaushee, Paulytanna,* &c. All these names are now altered, more or less, most of them for the better. But a spirit of reform is getting abroad in this matter, and if slowly, is yet surely working its way. The last edition of Elphinstone's History, by my friend Professor E. B. Cowell, has greatly improved the spellings, and the students of that excellent work may be expected to some extent to adopt the orthography they will there become familiar with. Dr. Keith Johnstone in his "Royal Atlas" has also adopted a large number of improved spellings, and other authors are following in the same track: even in some of our school-books reform is visible.

The difficulty Geographers find, however, is to discover, among the multiplicity of disguised forms, what the true spelling is; and out of India it is next to impossible to know how many an Indian name ought to be spelt. Even in a Marathi Geography I have found English nicknames and mis-spellings transliterated into the Vernacular,—so that we seem even in some danger of losing the correct names altogether. Now it has occurred to me that the Geographical Society of Bombay, or a Committee of it, would be able to get up a good list of the names of Indian towns, rivers, &c., which might be in many ways extremely useful. It would probably be impossible for the Society to

obtain the correct vernacular representations of all the names on our Maps or in Thornton's Gazetteer; but if the members would lend their aid, a list of names of permanent value might be secured. Among our members are some native gentlemen of great acquirements in languages, history, antiquities, and local geography, who,—I am sure,—could give valuable assistance. Other members could obtain from distant parts of the Mufassal, lists of great value, and, from the number of names I have been able to obtain within a few months, by reading and inquiry, I feel assured that were the Society to take up the matter, it could form an Index that would be a credit to the Society, and of great service to geographical science.

As to plan, it might be left very much to the Committee; but I think if such an Index were undertaken it ought to embrace:—

1. The proper spellings of all the names on our maps for which the Vernacular orthography can be obtained—followed by the name in Native characters—Devnagari, Persian, Telugu, or Tamil, with the taluka, zilla, province, latitude, and longitude.
2. The spellings most in vogue of places for which they differ except in termination from the correct spelling with a reference to the latter, and this should be specially done with all the more notable vagaries of spelling in Grant Duff, Orme, Dow, Mill, Rennell, Thornton, and other standard works.
3. Where the old Sanskrit name of a place is ascertained by St. Martin, Lassen, &c., it might also be added.
4. Names of founders, and dates of the foundation of towns, where known, might be inserted. Other features might be added if thought necessary.

Hoping that, if you approve of this suggestion, you will kindly lay it before the Bombay Geographical Society,

I have the honour to be,
Sir,
Your obedient servant,

JAMES BURGESS.

Bombay, 16th September 1867."

At the conclusion of Mr. Burgess' letter it was resolved to invite the following gentlemen to act as members of a Committee for the purpose

of forming a list or index of as many names of places marked on our best maps of India, as it is practicable to collect, written in the Vernacular characters of the districts in which the places are situated, viz :—

T. C. Hope, Esq., C.S.
R. S. Sinclair, Esq, LL.D.
Dr. Bha'u Da'ji, Hon. M.R.A.S.
Rao Saheb Vishvana'th Na'ra'yan Mandlik.
J. P. Hughlings, Esq., B.A.
Lieut. Henry Morland, F.R.A.S., F.R.G.S.
J. Scorgie, Esq., F.C.S.
J. Burgess, Esq., F.R.G.S., M.R.A.S.

The following Resolutions passed at the meeting of the Committee were then read by the Secretary for the approval of the Society :—

1. That a Book Case be provided for the accommodation of the collection of Books received on account of the Cursetjee Furdoonjee Paruck grant, and the surplus be carried to the General Fund.

2. That the object of the donor, Mr. Bhugwandas Porshotumdas, having been carried out, the balance of Rs. 1,093-8-6 available from his grant of Rs. 3,500 be appropriated for the general purposes of the Society.

3. That Rs. 1,000, out of Mr. Premchund Roychund's grant of Rs. 5,000 for Maps, Charts, &c. be retained for the purposes of the Society.

4. That the Society's clerk, Mr. Balvant Krishnarão Pálekar, be granted an increase of Rs. 20 to his present salary, commencing from 1st May last.

Captain Morland reported for the information of the Society that Rs. 280 were remitted to the Royal Geographical Society of London, being the amount collected up to date on account of the Speke Memorial; and that £100, or Rs. 1,054-15-1 were also remitted to W. E. Frere, Esq., ex-President of the Society, to whose discretion the disposal of the remittance, the selection of an artist for the execution of his Portrait, and the size of the Portrait, &c. were entirely left. He then read the Paper "Memorandum on the Geological action on the South Coast of Kattyawar, and in the Runn of Cutch. By William Sowerby, Esq., C.E., F.G.S.," announced for the evening.

At the conclusion of this Paper, it was proposed by James Burgess, Esq., F.R.G.S., M.R.A.S., and seconded by Ráo Sáheb Vishvanáth Náráyan Mandlik, and unanimously carried—

"That the best thanks of the Society be conveyed to Mr. Sowerby for his valuable paper on the supposed Geological Action on the South Coast of Kattyawar, &c., and that Mr. Sowerby be requested to supply such portions of the maps or tracings therein referred to, as are necessary to the proper understanding of his paper when printed in the transactions."

The meeting then adjourned to next month.

SESSION 1867-68.

SECOND MEETING, *November 21st*, 1867.

The ordinary Monthly Meeting of the Bombay Geographical Society was held in their Rooms, Town Hall, on Thursday, the 21st November 1867, at 5 P.M.

Present—The Honourable George Foggo, *Vice-President*, in the chair; Bháú Dáji, Esq., Hon. M.R.A.S; J. Burgess, Esq., F.R.G.S., M.R.A.S.; K. R. Kama, Esq., F. J. Candy, Esq., M.A.; Atmaram Pandurang, Esq., Dhirujram Dulputram, Esq., J. Macfarlane, Esq., *Members*: and Lieut Henry Morland, F.R.A.S., F.R.G.S., *Honorary Secretary*.

The Minutes of the last Meeting were read and confirmed.

Election.—Alexander Gibson, Esq.

Members proposed.—J. Macdonald, Esq., and F. W. Pickering, Esq.

Donations.—The following donations were announced, for which the best thanks of the Society were voted to the donors:—

1. Bulletin of the Geographical Society of Paris, for June, July, and August 1867. Presented by the Society.
2. Memoirs of the Geological Survey of India, Vol. VI. Part 2. By the Government of India.
3. Official Statistics of Norway.—By the University of Christiania.
4. Meteorological Observations made at the Christiania Observatory in 1865. By the University of Christiania.

Letters.—The following letters were then read:—

1. From H. W. Farley, Esq., Accountant, Royal Geographical Society of London, acknowledging with thanks the receipt of £26-10-10 remitted by this Society on account of the Speke Memorial Fund. 2. From William Sowerby, Esq., C.E., F.G.S., thanking the Society for the very flattering Resolution conveyed to him, and promising to furnish the charts referred to in his paper. 3. From J. P. Hughlings, Esq., B.A., University Registrar, requesting to be allowed the use of the Society Rooms for the University examinations, as last year. 4. From the Officiating Superintendent of the Geological Survey of India, forwarding donations for the acceptance of the Society. 5. From J. P. Hughlings, Esq., B.A., Bhau Daji, Esq., Hon. M.R.A.S.; Ráo Sáheb Vishvanáth Náráyan Mandlik, James Scorgie, Esq,. F.C.S., and R. S., Sinclair, Esq., LL.D., signifying their willingness to serve on the Committee appointed for forming a list of Vernacular names. 6. From T. C. Hope, Esq., expressing his regret at his inability to accept the above office, in consequence of his having been much occupied.

It was then proposed by the Secretary, and seconded by Dr. Bháu Dáji, and unanimously carried:—

"That this Society place on record the expression of the deep sorrow with which they have heard of the death of the Rev. W. K. Fletcher, M.A., for nine years a respected Member of the Society, and latterly one of their Vice-Presidents; and their testimony to his amiable disposition, high character, and the warm interest he has always taken in the affairs of the Society."

Paper.—The Honorary Secretary submitted to the meeting the paper announced for the evening. It was a report of a Journey made by Captain E. C. Ross, Assistant Political Agent, Gwadur, along that portion of the Mekran Coast, which lies between Cape Jask and Gwadur.

The best thanks of the Society having been voted to his Excellency the Right Honourable the Governor in Council for the valuable communication, the meeting closed at a very late hour.

The Society did not meet in December 1867.

BALANCE SHEETS

OF THE

BOMBAY GEOGRAPHICAL SOCIETY.

FOR

1864-65, 1865-66, and 1866-67.

p 15 bg

Annual Statement of RECEIPTS AND DISBURSEMENTS *on account of the* BOMBAY GEOGRAPHICAL SOCIETY, *from 1st May* 1864 *to 30th April* 1865.

Date.	RECEIPTS.	Rs. a. p.	Amount. Rs. a. p.	Date.	DISBURSEMENTS.	Amount. Rs. a. p.
1864				1865		
May 1	To Balance on this date, viz:—			April 30	By Cash paid to Office Establishment during the year	916 13 7
	In the hands of the Treasurers	2,172 9 3				
	Do. of the Secretary...	369 5 0				
			2,541 14 3	"	" Subscription to the *Times of India*, Stationery, Postage, and Contingencies	156 14 1
"	" Government subscription for twelve months		600 0 0			
"	" Annual subscriptions from Members, viz:—			"	" Cash paid for printing monthly circulars, &c.....	23 8 0
	On account of 1862-63 .....Rs.	45				
	Ditto of 1863-64 ..... "	60				
	Ditto of 1864-65 ..... "	870		"	" Amount remitted to T. D. Thomson, Esq., for the purchase of the Cursetjee Furdoonjee Paruck Presentation Books, in part	521 11 9
	Ditto of 1865-66 ..... "	49				
			1,024 0 0			
"	" Amount received from Premchund Roychund, Esq., for the purchase of Charts, Maps, &c.....		5,000 0 0	"	" Commission to Messrs. Remington and Co., Treasurers, on payments, Rs. 2,100 at 1 per cent	21 0 0

"	"	*Do. from Sorabjee Pestonjee Framjee, Esq., for printing a new edition of Vol. VI. of the Society's Transactions*		1,000	0	0			
"	"	Do. from Bhugwandass Purshotumdass, Esq., for publishing a Catalogue of Charts, Maps, and Index, &c		3,500	0	0			
"	"	Do. paid in on account of the "Frere Portrait Fund"		535	0	0			
"	"	Do. realized by the sale of Philosophical Instruments during the year		2	8	0			
"	"	Interest from Messrs. Remington and Co., Treasurers, at 5 per cent.		69	11	8			
		Total Rupees.....		14,273	1	11			
"	"	*Balance on this date, viz :—*							
		With the Financial Association of India and China, Limited.		6,000	0	0			
		In the hands of the Treasurers.....		6,499	9	2			
		Do. of the Secretary, viz :—							
		General Office Cash...Rs. 98	9	4					
		Balance of "Frere Portrait" Fund... „ 35	0	0					
							133	9	4
									12,633	2	6
		Total Rupees.....							14,273	1	11

Bombay, 1st May 1865.

Examined and found Correct,

A. C. GUMPERT,
J. P. HUGHLINGS, } *Auditors.*

Errors Excepted,

D. J. KENNELLY,
Secretary to the Society.

Annual Statement of RECEIPTS AND DISBURSEMENTS *on account of the* BOMBAY GEOGRAPHICAL SOCIETY, *from 1st May 1865 to 30th April 1866.*

Date.	RECEIPTS.	Amount.	Date.	DISBURSEMENTS.	Amount.
		Rs. a. p.			Rs. a. p.
1865 May 1	To Balance on this date, viz :—		1866 April 30	By Cash paid on account of Office Establishment during the year.....	929 8 0
	In the hands of the Treasurers..... Rs. 6,499 9 2		,,	,, Subscription to a Copy of the *Times of India*, Stationery, Postage, and other Contingencies	188 9 4
	Do. of the Secretary, viz :—		,,	,, Printing and advertising charges	79 8 0
	General Office Cash.....Rs. 98 9 4		,,	,, Cash paid for writing the address to the Honorable Mr. Frere, and Kinkob bag, &c. for the same	128 0 0
	On account of "Frere Portait" Fund..... ,, 35 0 0		,,	,, First Instalment remitted to London from the Bhugwandass Purshotumdass grant on account of the Index to the 17 Volumes of the Society's Transactions, and Catalogue of Charts, &c.	1,500 0 0
	133 9 4		,,	,, Do. from Sorabjee Pestonjee Framjee grant on account of the reprint of Vol. VI. of the Transactions	500 0 0
	With the Financial Association of India and China, Limited 6,000 0 0		,,	,, Second instalment remitted from the Cursetjee Furdooonjee Paruck grant on account of Books	878 0 0
		12,633 2 6	,,	,, Amount paid for preparing an Index to Vol. XVII. of the Transactions	50 0 0
,,	,, Government Subscription for twelve months	600 0 0	,,	,, Do. to Messrs. Smith, Elder, and Co., on account of their Invoices.....	53 4 8
,,	,, Annual Subscriptions from Members, viz :—				
	On account of 1863-64...Rs. 15 0 0				
	Do. of 1864-65... ,, 45 0 0				
	Do. of 1865-66... ,, 1,095 0 0				
		1,155 0 0			
,,	,, Amount recovered on account of "Frere Portrait" Fund	1,115 0 0			

"	" Do. on account of the "Speke Memorial" Fund	240	0	0
"	" Amount of Interest from the Financial Association of India and China on sums of money deposited with them at different times	489	7	2
"	" Amount of Interest from D. J. Kennelly, Esq., on three bills of Exchange on London, the amount of which was realized when they fell due, but not paid to the several parties for whom the Bills were drawn, as the works were not ready	134	0	0
"	" Interest from Messrs. Remington and Co. at 2½ per cent. per annum	100	6	10
"	" Amount realized by the sale of a copy of *Times of India Calendar* for 1865.	2	0	0
"	" Fines from Peon	8	15	0
	Total Rupees	16,477	15	6

Examined and found Correct,

J. P. HUGHLINGS,
GEORGE BIRDWOOD, } *Auditors.*

"	" Commission to Messrs. Remington and Co., Treasurers, on receipts, Rs. 10,800, at 1 per cent.				108	0 0
"	" Cash paid to the Bombay Education Society's Press, for printing 300 Copies of Vol. XVII. of the Society's Transactions				2,080	0 0
	Rupees...				6,494	14 0
"	" Balance on this date, viz :—					
	In the hands of the Treasurers..... Rs.	9,573	7	2		
	Do. of the Secretary, viz :—					
	General cash balance, Rs.	219	10	4		
	Balance of "Frere Portrait" Fund..... "	150	0	0		
	Do. of "Speke Memorial" Fund..... "	40	0	0		
			409	10	4	
					9,983	1 6
	Total Rupees.....				16,477	15 6

Bombay, 1*st May* 1866.

Errors Excepted,

HENRY MORLAND,
Honorary Secretary to the Society.

Annual Statement of RECEIPTS AND DISBURSEMENTS *on account of the* BOMBAY GEOGRAPHICAL SOCIETY, *from 1st May 1866 to 30th April 1867.*

Date.	Receipts.	Amount.	Date.	Disbursements.	Amount.
1866		Rs. a. p.	1867		Rs. a. p.
May 1	To Balance on this date, viz :—		April 30	By Office Establishment	948 0 0
	In the hands of Messrs. Remington and Co...Rs. 9,573 7 2				
	Do. of the Secretary „ 409 10 4		„	„ Subscription to Daily Edition of the *Times of India*, Postage, and other Contingencies...	113 9 2
		9,983 1 6			
„	„ Government donation for 12 months...	600 0 0	„	„ Printing Charges.....	36 8 0
„	„ Annual subscriptions from Members, viz :—		„	„ Amount refunded to Colonel Conybeare, President of the Committee of Adjustment, being the subscription of the late Dr. Welsh received in advance for the year 1867-68	15 0 0
	On account of 1865-66...Rs. 60 0 0				
	Do. of 1866-67... „ 435 0 0				
	Do. of 1867-68... „ 195 0 0				
		690 0 0			
„	„ Amount recovered on account of "Frere Portrait" Fund	15 0 0	„	„ Commission and Petty Charges.....	78 6 3
				Rupees...	1,191 7 5
„	„ Interest at 2 per cent.....	109 4 2	„	„ Balance on this date, viz :— In the hands of Messrs. Remington and Co. Rs. 9,904 5 1 Do. of the Secretary, as follows :— General Cash balance...Rs. 96 9 2	

				On account of "Frere Portrait" Fund.....	„ 165	0	0
				Do. "Spoke Memorial" Fund.....	„ 40	0	0
						301	9 2
						10,205	14 3
Total Rupees.....	11,397	5	8	Total Rupees.....		11,397	5 8

Bombay, 1st May 1867.

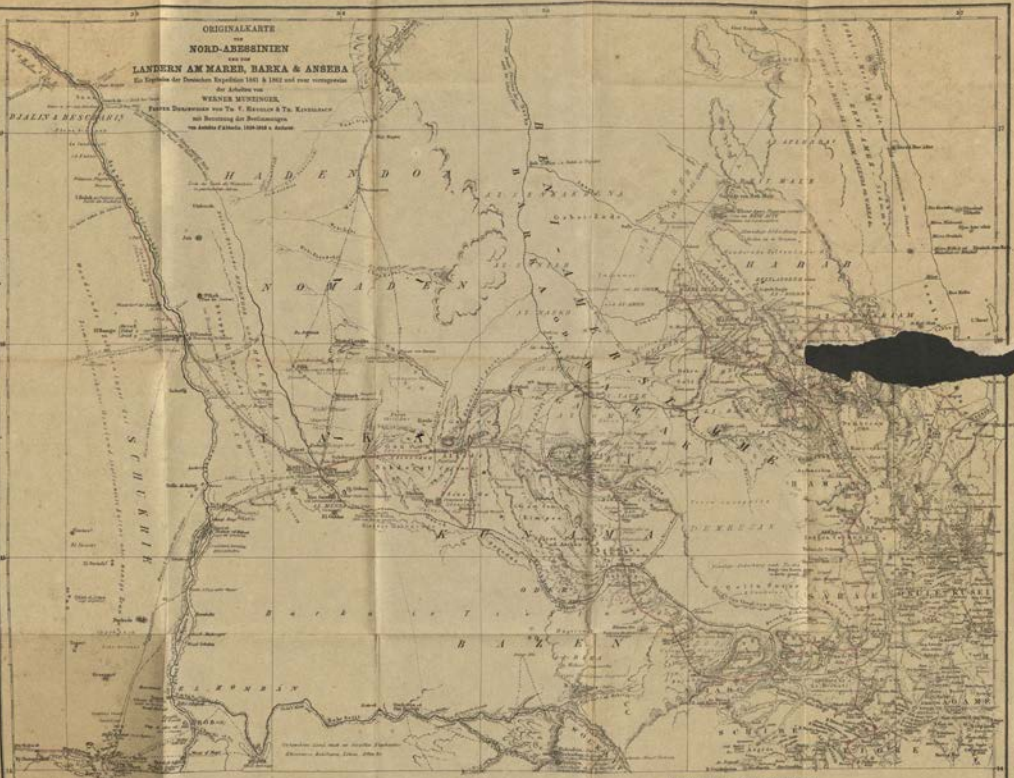
Examined and found Correct,

J. T. ANNESLEY,
J. BURGESS, } *Auditors,*

Errors Excepted,

HENRY MORLAND,
Honorary Secretary to the Society.

REFERENCE TO COLOURS.
MODEL CHART NO. I
CHRONOMETRIC SURVEY
of the
BOMBAY BANK OF SOUNDINGS
BY
Lieut. W. R. Kelly & R. W. Whish
Assisted by
EAST INDIA COMPANY'S SURVEYING BRIG TAPTEE
Executed in the Years
1849 and 1850.


ORIGINALKARTE
NORD-ABESSINIEN
LANDERN AM MAREB, BARKA & ANSEBA
WERNER MUNZINGER,
DJALIN & BESCHARIN
HADENDOA
NOMADEN
BARKA
HABAB
SUHUKRIE
KUNAMA
BAZEN
DEMREZAN
ACCOMPANIMENT TO A PAPER READ BY
LIEUTENANT HENRY MORLAND, F.R.A.S., F.R.G.S., &c. &c.

TRANSACTIONS

OF THE

BOMBAY GEOGRAPHICAL SOCIETY.

ART. I.—GLEANINGS AS TO THE PRESENT STATE OF ABYSSINIA, *and a* SHORT ACCOUNT *of a* VISIT *to the* HOT SPRINGS *of* AILAAT.—*By Lieut.* HENRY MORLAND, F.R.A.S.

Read before the Society, January 19th 1865.

ABYSSINIA at present has considerable interest attached to it, chiefly from the fact of H. B. Majesty's Consul, several European gentlemen and Missionaries, and also two ladies, being held in imprisonment by Theodorus, the King of that country; and the *Dalhousie*, under my command, having recently conveyed a mission to Massowa, the principal export town of Abyssinia, and having been detained there for some months, I have had opportunities to ascertain a few facts regarding the present condition of the country, which at the suggestion of our worthy Secretary, I have committed to paper, in the hope that they may prove not altogether uninteresting to the Society.

The journey to Ailaat was made, partly for the alleviation of rheumatism, which had been caused by the insalubrious climate of Massowa, and partly for shooting, which will account for my not having provided myself with the necessary instruments for determining the topographical and physical features of the country.

The country of Abyssinia may be briefly described as consisting of a low country, bordering on the Red Sea, and gradually ascending to a height of about 1,000 feet from the level of the sea, at about forty miles inland; where the mountains abruptly rise to a height of six to nearly ten thousand feet, and at their summit is the plateau, intersected

by ravines of from two to four thousand feet deep, thus causing, as it were, a series of plateau, which consist of most excellent land, more or less cultivated for the growth of cereals, of which the principal are jowaree, barley, and maize; from the former, the bread commonly used is prepared; the method of preparation is very simple and expeditious. The seed having been crushed between a couple of rough stones, is mixed with water, roughly kneaded into dough; the nearest stone is thrown into the fire, heated, and extracted again; the dough is made to cover the stone; the fire is removed; the dough is placed in the embers, baked, and removed in five minutes; it is then opened, the stone permitted to fall out, and the result is what the natives call "teff;" just at the present, however, the grain throughout Abyssinia is considered very high in price: and, indeed, a famine threatened, owing to flights of locusts in the spring having destroyed nearly the whole vegetation: and another active cause may probably be the complete state of anarchy in which the whole country is plunged, and the unwillingness of the peasantry to cultivate their land; knowing as they do that if successful in their harvest, it would simply bring more tyranny upon them.

The present King, Theodorus, has won the throne by repeated conquests, having been originally of inferior position. He was formerly employed by the mother of Ras Ally, as tax-collector in a small and remote province, and it would seem that at her death the idea of conquering the (at that time) three kingdoms of Abyssinia, and reducing the whole under his sole rule, first took possession of him; from that time to the present, his victories have been so marvellous, and his rule so despotic, that the soldiery (it is said) really believe him to be invincible, and fight with the most reckless bravery under his command.

The troops are never paid, and when at last they become so clamorous for money that there can be no more delay, or when a party of troops meet with the particular approbation of the King, it is his custom to place a certain number of houses in the capital (Gondar), or else a small province at their disposal, for their spoliation. Gondar being a very ancient city, it is rumoured, and generally supposed by the inhabitants, that jewels and money of great value are hid and buried in the houses, and when once given over to the troops, they are ransacked to their foundations, and the site thoroughly dug up. If the King

requires money, he orders certain districts to furnish the necessary amount, and if they fail to do so, the troops are ordered to lay waste the district. He has given instructions for the immediate seizure of all Europeans within his territory; and during the stay of the *Dalhousie*, news reached us of the sacking and burning of the Roman Catholic Mission-house at Hallai, in Lat. about 15 deg. N. and Long. 39 deg. 23 m. E. on the top of Mount Taranta, 9,000 feet above sea-level, which had existed for years. The Abuna, or Head of the Church, had been imprisoned, and was only released about a month before we left; this dignitary had been always looked up to, as only second to the King in power, and his holy office gave him privileges and emoluments enjoyed by no one else. These have been entirely taken away from him by the King, and he now occupies a very inferior position. At the time of my leaving Massowa, the King was said to be at the head of (30,000) thirty thousand men, subduing some insurgent chiefs, three days' march from Gondar. The district of Walkait was also said to be in a state of insurrection, and Gondar to have been entirely sacked and ruined by the King's own troops. The merchants of the city, who had any property left to lose had all fled, some to Egypt, and others to Massowa and other Turkish territories. The army is said to number between 40 and 50 thousand men; about 4,000 armed with matchlocks and muskets, and the remainder with spears and swords. The metal of which these arms are manufactured is of very inferior quality; and English steel knives and weapons in general, are held in small estimation, from their hardness and the difficulty experienced in sharpening them. Fire-arms of all descriptions, of English manufacture, are esteemed superior to any other; and a present of gunpowder and percussion caps is perhaps more esteemed than any other present. The rumours of the causes that led to the imprisonment of our Consul, are numerous; one matter, however, appears certain, namely, that Captain Cameron left King Theodorus to visit a district under the Turkish Government, directly against the wish of the King; and on his return to the capital he was seized whilst proceeding from his tent to pay his first visit to the King; that he was ironed to an Abyssinian, and continued so up to the last date of intelligence. Whether the missionaries were imprisoned immediately before or after the Consul I did not correctly ascertain; it would appear, however, that the Rev. Mr. Sturm was the first imprisoned, and the immediate cause is said

to be that he interfered, remonstrated, and used personal abuse to the King himself, for having caused one of his servants to be punished, and that he had persisted in executing a survey of the country, when directed not to do so by the King; for this he was imprisoned and severely flogged. It also appears that, immediately afterwards, the King discovered that it had been the custom of the missionaries generally to speak and write in disparagement of *him* and of each other, that he had all their papers seized, and examined by an old foreigner, *who is said to be his chief adviser for all bad purposes*, and the missionaries were imprisoned through his representations. They are said to be chained in couples, but attended to by their wives, who are not interfered with; the consul only is said to be well supplied with provisions; the missionaries to exist chiefly on what he gives them from his allowances. Just before the *Dalhousie* left Massowa, a messenger arrived from Gondar to M. Werner Menzinger, Acting French Vice-Consul, who stated that he had left a letter from Captain Cameron to that gentleman, at his usual residence at Kerens, in the Bogos country, a saddle-land about 4,500 feet high, bordering on Hamassen; that Captain Cameron had heard of the arrival of the mission; that he urgently required sugar, rice, and dollars; that one European supposed to be Mr. Kerens, and a Copt named Dawood, imprisoned with him, were dead. He also stated that the letter was written chiefly to warn M. Menzinger, and the other Europeans residing at Kerens from remaining there, as more strict injunctions had been issued by the king to the subordinate governors of districts to seize all Europeans. News also reached Massowa that M. Menzinger had started for Kassala, so that the letter remained at Kerens without *his* knowing his immediate danger. Rice and sugar were sent for Captain Cameron; a messenger after M. Menzinger, also bearing the news of his French agent, *M. Chappaud*, having just died very suddenly, and under peculiarly suspicious circumstances, at Massowa; and another messenger to the Bogos for the letter, which did not arrive, however, before I left. The climate of Abyssinia is said to be most healthy and pleasant when once on the plateau, but in the lowlands and in the valley of the Tacasi River, it is very unhealthy, and the heat terrific; even at Massowa, on the sea-coast, we seldom or never, during July, August, and September, had the thermometrical range below 92 deg. at night, and often to 108 during the day; and on our trying the relative merits

of the shore, we found that from 9 A.M. to 3 P.M. the thermometer stood at 100 to 115 deg., and our intended stay of three days was reduced to one day on experiencing the change of temperature.

The Kafelahs from Abyssinia and the Soudan arrived in Massowa during the latter end of September, bringing large quantities of gold, ivory, hides, civet, bees' wax, &c., which are exchanged at Massowa with the merchants for piece goods, gunpowder, lead, velvets, &c. At Massowa the price of gold was 15½ to 16 dollars per dollar's weight; that of the best ivory 50 dollars for 43 lb. of 16 dollars' weight; bees' wax about 5 lb. per dollar; gunpowder was sold at Massowa at 3¼ dollars per lb., but the sale is now entirely prohibited by the Sublime Porte, who, despite the constant boast of King Theodorus "that his kingdom extends to the sea," exercise the control and collect the taxes of the whole of the lowland bordering on the sea, to a distance of 40 miles inland. In conclusion, I would beg to remind you that these statements are but *gleanings*, derived generally from a race who study untruthfulness as an art, and who consider the capability of concocting a series of falsehoods in verification of each other a desirable accomplishment at all times; and I may also mention that no vessel, *either native or European*, was (during my stay) allowed to leave for Aden (a matter of rare occurrence), without some most plausible rumours and reports having been specially concocted and imported to Massowa, doubtless in the hope of obtaining some small remuneration for the (to be presumed) welcome facts, so opportunely arriving for transmission to our friends.

During the month of October the monotony of Massowa was very trying to all the mission, and to myself peculiarly so; and having suffered severely for some time from the great variation in temperature, which began to occur almost hourly, my friend Dr. Blanc, and myself, arranged an excursion to Ailaat, with objects which I have previously stated. Accordingly, having obtained tents, camels for carriage of servants and our kit, guides and other necessaries (and having sent on the tents the evening before, attended by the nephew of the *Naieb* and an orderly kindly lent by the Acting Governor, intending them to reach *Saati*, the first resting and watering place, situated about 15 miles due west from Massowa, at daylight on the day of our starting, and to have the whole day to pitch them and arrange for our arrival), I left Massowa at sunset to join Dr. Blanc at *Moncooloo*, a village distant about

four miles, where he was staying at the country-house of M. Menzinger, a merchant and the acting French Vice-Consul at Massowa; across a plain of mixed sand and clay, and on which *cacti*, scrub brushwood and the prickly acacia are the only specimens of vegetation, and the road through which had been formed by the foot-tracks of the natives in their daily visits to transact their business at Massowa. I duly arrived at Moncooloo, which is a scattered hamlet composed of three villages, viz., "Moncooloo," "Atoomloo," and "Belaat," and after a delay of about an hour Dr. Blanc and myself, accompanied by Abdoo, the *Cussab* Kebeer of Massowa, started on our journey. The road was but a footpath, rising occasionally over small sandhills, and at times leading through the dry beds of watercourses, passing a mile or two of thickly wooded valley, well stocked with game, consisting of "gazelle," "hare," "guinea-fowl," and "partridges"; occasionally as we passed, a hyena would show himself, or perhaps a pair of them, but always showing that we were recognized, by keeping a considerable distance off. It is said in Abyssinia that these animals often steal the blankets away from a bed, and the sleeper is unconscious of the fact until awakened by the cold.

As it was, the bright moonlight shining on the sandy plains and valleys, interspersed by innumerable small trees, the refreshing coolness of the atmosphere and the balmy softness of the air rendered our evening's ride by far the most genial pleasure we had experienced since our arrival at Massowa, until about 1 A.M., when, on turning the corner of a hill, and descending a rocky pass, we came full in sight of our tents and escort, pitched at the end of a ravine and near the base of a perpendicular rock, rising 170 or 180 feet, at which point also the water appeared to exude. This being the only watering place for miles round, we were surprised to find no reservoir, or any means of collecting the water, of which there was at some seasons a scanty supply, and which is allowed to flow in a broad stream of two or three inches deep by as many yards wide, until it wastes itself in a wide expanse of ground, which doubtless accounts for the trees in the neighbourhood having grown to a height of 30 or 40 feet. After our journey we were glad to get to sleep, and about 3 o'clock we were awakened by the noise of innumerable winged creatures flying past close over our heads, and which I imagined to be swarms of bats, *the moon having by this time sunk behind the hills by which we were*

encompassed. Daybreak, however, discovered our visitors to be flocks of thousands of rock grouse coming in from a distance to drink, some so exhausted as to fall within twenty or thirty yards of the water; all, however, quickly satisfying their thirst and flying away to make way for new comers. Daybreak also showed us the declivities near the stream, almost covered with guinea-fowl and small game of all kinds, but the first glimmer of sunlight was the signal for them to disperse, and before the sun could show itself not a bird was to be seen. During the day, however, a crowd of monkeys of all sizes and colours paid us a visit, making a tremendous chattering as they picked their way down and re-ascended the banks. The thermometer stood at 98 deg. during the day, and at sunset we struck our tents, about which time also the game came again for water; and, however incredible it may appear, I can assure you that the sky was considerably darkened by the denseness of the flocks, and they fly so fast that a charge of shot fired at the headmost bird of a flock, leaves a line vacant for I should say 20 to 30 yards, and probably brings down as many birds; under these circumstances, it can then easily be imagined, that a very moderate sportsman can supply his own commissariat by the aid of his gun in that country. From "Saati" the road got gradually worse, and ascending between hills in the beds of mountain torrents, thickly strewed with rocks and boulders; enormous slabs laying at all angles, sometimes pivoted; round stones, from the size of one of those globes to that of a 68 pr. shot; and through rocky passes with the sharp rocks touching our mules' ribs as we passed; the hills on each side rising to a height of two or three hundred feet, made this road, which extended about 5 miles, extremely oppressive and unpleasant. When, however, we were once past this, the scenery and deliciously cool night air amply rewarded us. For miles our road led down a gentle decline of clayey soil, smooth as a sheet of glass, with trees of all kinds varying the prospect, all as regularly planted and equally divided by the hand of nature, as they could be artificially in our own country; some of the trees rising to a fine height, the thick leaves of others spreading with a wide area, and again the strong branches and thick foliage of others drooping at a convenient distance from the parent stem, and forming a beautiful arbour, said to be sometimes the resting place of the peasant, and occasionally that of the lion or panther. The approach to "Ailaat" was then for about

four miles across this plain, when we arrived at a scattered village, constructed, as all the houses on the low land appeared to be, of stakes driven into the ground about six inches apart, so as to form an oblong, and the interstices filled with branches of a prickly thorn, and a small compound enclosed by a dense hedge of the same description. We slept at "Ailaat," and the next morning proceeded on to the springs, which we found were about four miles distant, and the road to which led through a thin wood, and afterwards up the bed of the water-course proceeding from the springs. As we neared the springs the water, which about two miles down was delightfully cool, gradually became hotter, until at the springs it exuded from a gravelly soil at a temperature little below boiling point. The thermometers we had were only marked to 143 deg., and the mercury almost instantaneously rose to the top of the tube. There are several springs exuding from a gravel bed at several temperatures, the lowest of which was about 90, but all contained in a circumference just allowing our small hill tent to stand in it. At night a long line of steam marks the line of the rivulet for about half a mile; and at a little distance down, it is as hot as the hand can bear. Each margin of the stream has marked a deep brown ridge on the sand and rocks, and led us to the supposition that there is a considerable quantity of iron in solution in the water: and its beneficial effects, in the alleviation of rheumatism, I myself can testify to. Again expressing my regret at not having provided myself with instruments for determining more satisfactorily the thermometrical range of the water, I would invite your inspection of the few specimens of the produce, arms, and manufactures of the country, which I collected during my stay at Massowa; and solicit your acceptance of the accompanying small map of North Abyssinia, in German, by M. Werner Menzinger, which, I understood from that experienced traveller and author, had not, as yet, been published in England. The swords from Abyssinia, to which I invite your inspection, are from Shoa, Amhara, and the Shiho, or low land of the Galla country. They are universally worn on the right side, and from their great length and unwieldy shape would appear to be anything but wieldy weapons to be handled. The spears are from the same districts as the swords; and the shields are those commonly used in Abyssinia and the Galla country, and manufactured from the wild buffaloe hide. Armed with the short sword and shield, the Galla tribe are said to

fearlessly attack the lion in his lair, and defeat him single-handed in the encounter.

The leather is manufactured in the Hamássen districts, and judging from the size of the hide it would appear that the cattle must be of a very large breed. The cloths, of which there are two descriptions, are both manufactured at Adowa; that embroidered on the border with silk, is worn by the nobles chiefly; the other with the deep crimson border is worn by the ordinary class of inhabitants; the King is also said to adopt the latter, except on great state occasions, when he appears clothed in velvets. Both cloths are worn by day and night—beds being considered as far too refined a luxury to enjoy asleep. The gold is stated to be found in dust in the water of the Galla country, and to be smelted and run into its present shape. The quantity exhibited is a little more than two ounces in weight. The elephant's and hippopotamus's tusks are too well known as articles of merchandise to need any explanation from me—the latter, however, would appear to be rather large specimens. Lastly, the dessert service, manufactured at Massowa from the shell of the pearl oyster, by a native of that place, and presented to me by Mr. Hourmuz Rassam, *on special mission to Abyssinia*, will give you an idea of the size of the oysters found at the fisheries, amongst the Dhalac islands off Massowa.

Art. II.—REPORT on an OVERLAND JOURNEY from BAGDAD to CONSTANTINOPLE, through Turkish Arabia and Asia Minor.—*By Lieut. Col.* F. J. Goldsmid. *Contributed by Government.*

Read before the Society, October 19th, 1865.

With reference to former correspondence in the early part of the present year, I have now the honour to submit to the Right Honourable the Governor of Bombay in Council the papers specified in the margin, prepared on arrival at this capital last August. The overland journey through Turkish Arabia and Asia Minor to which they refer was undertaken, it will be remembered, in accordance with the proposition of Colonels Kemball and Stewart, C.B., under the full approval of the Bombay Government, and with the express sanction of the Sublime Porte, communicated by H. B. M.'s Ambassador at the Ottoman Court.

Memorandum on the march from Bagdad to Izmid, with accompanying letter to Lieut.-Colonel P. Stewart, C.B.

2. I left Bagdad, in company with Mr. Kersting, a gentleman connected with the Anglo-Indian Telegraph, and Ahmed Effendi, an Egyptian engineer specially deputed by H. E. Namik Pacha, on the 19th May last, and reached Angureh, in Asia Minor, on the 30th July. The distance, about 1,054 miles, was accomplished in 73 days, the average of marches, exclusive of halts being 18 miles, and inclusive of them 14½ miles per diem. From Angureh to Izmid, a further distance of 210 miles, I posted in about 3½ days, and from Izmid the Gulf Steamer conveyed me in eight hours to Constantinople.

3. Adopting to some extent the sections of my printed Report on the Mekran Mission of the 22nd February 1862, I would make the present subject divisible as follows:—

I. The route, with special reference to Telegraph purposes.
II. The natural products of the soil, and means of obtaining water and supplies.
III. The inhabitants, with some account of the larger towns, and matters of general or political interest.

4. On the first of these the enclosed papers will perhaps give all the requisite information. It had been my intention to have modified and condensed them, but time and opportunity having failed me, I have thought it better to submit them as originally drafted. I will now proceed at once to the second head.

II. Natural products of the soil, water, and supplies.

5. At Bagdad it is the custom of residents when the hot weather sets in to remove from the ordinary place of abode to the *serdab* or underground house. My departure from the city was just at this particular period of domestic migration. The heat was great during the day, nor was it likely to decrease until we had got fairly out of the lower valley of the Tigris. Under these circumstances we were in a condition to appreciate the value of water as well as to feel the want of that most essential element. And certainly in this respect the country east of the Tigris is blest in a remarkable manner. The Dyala, the Greater and Lesser Zab, and the Hazir or Khazir, with the less perennial Taok and Tuz Khunnah Su, may be classed as actual rivers occurring between Bagdad and Mosul, all having their source amid the snow-covered mountains of Kurdistan. In addition to these are canals and subsidiary streams. Of the affluents, the Khalis, near Bagdad, has brought down a sufficient volume of water during the present year to cause a stoppage of some weeks on the telegraph line.

6. Beyond Mosul, again, there is no lack of water to Jezireh. Though rivers do not cross the road like those above mentioned, there is one, the Khabur, which is by no means insignificant. We had to swim our horses across it, as at the passage of the Tigris and Zab Su. Many minor streams are encountered, and water-mills are not infrequent. The mill at Gerishekist, a charming little Christian village about twelve hours' north of Mosul, is an admirable illustration of romantic scenery.

7. But the grain-fields are even more remarkable than the abundant supply of water in this country between Bagdad and Jezireh. In many places, especially near Mosul, the wheat and barley extend as far as the eye can reach. East of the Tigris, and between the Kurdish mountains and the river, there is no lack of the staff of life, and the amount carried down to Bagdad must be considerable. At Altmo Kiupri, on the Lesser Zab, I observed a raft loading. It is said that

they reach the Tigris from this point in eight hours, taking wheat, barley, and tobacco. Near the low, rocky ranges of hills, such as the Hamrin and others near Kifri, the soil is less productive, perhaps because cultivation is less attempted. Here, however, the verdure of the plains would render the term 'Desert' inapplicable; and, if the population were not few and scattered, rich harvests might reasonably be anticipated.

8. Flocks and herds abound, as might be expected among a people whose habits are essentially pastoral, such as the Arab and Kurd of these tracts. Indeed as regards fresh provisions the traveller is here better off than in India, for if he please he may have constant supplies. Fowls are almost everywhere abundant. Milk, in the pure form, or in the sour stage ('Shanina'), or in more solid curds ('Yoghurd'), known in India as *Dui*, is to be procured in every village unaffected by desertion or decay. The cheeses are somewhat void of flavour, but not to be despised.

9. Fruits of some kind are to be found in the larger villages. The most common is the small apricot, called by the Arabs 'Mish-mish.' Ice was brought from the town of Arbeil to the Kurdish tent in which we were located, and proved highly acceptable. Wines are made both at Kerkuk and Mosul.

10. Crossing the Tigris for the first time at Jezireh, and ascending into what may be called Upper Mesopotamia, the country does not, certainly, improve in fertility. But, in spite of the absence of those vast sheets of corn which cover the valley or plains of the Tigris to the eastward of the river, a new vegetation presents itself to the eye in these rugged high-lands, which has its charms for the traveller. Before reaching Mardin we come upon a most refreshing garden-land, a land of the walnut, plum, cherry, and apple trees; of vines and of flowers; of cascades and running streams. The general characteristic is perhaps the barrenness of stunted Indian jungle, but in examining the crannies and the defiles these attractions come to light. Between Mardin and Diarbekir, even amid many hard and inhospitable-looking hills, there is to be discerned at intervals a fine rich soil; but the general appearance of fertility falls far short of the plains east of the Tigris, and rock or stone prevail. Water is ample, either from rivers, streams, or roadside fountains. These last increase in number as we approach Asia Minor. At Mardin and Diarbekir supplies of all kinds are procurable, and to almost any amount.

11. From Diarbekir to Kharput there is a good deal of cultivation for the first two stages, and up to the foot of the mountain range, of which the Argana hill is the more remarkable outwork, with sufficient water from canals. The passage of the Batman Dagh is not altogether sterile, for we found amid one of its wildest and most romantic valleys a village or two yielding a fair portion of the necessaries of life. And from hence to Kharput we have first a fertile plain, then a steep mountain called the 'Deva Boynun,' or Camel's Neck, and lastly the Kharput plain itself, which holds villages teeming with supplies of every description.

12. Kharput may be considered a good half-way point between Bagdad and Izmid. Taking at one glance the whole of the second half, my own experience tells of abundance in most places, of sufficiency in many, and of want in very few. I would confine those few to the right bank of the Euphrates, and when we were turning our heads again northwards to Sivas. For although the roads through Asia Minor are not strictly through unbroken fields of grain, as near Mosul, ample stores could, it is presumed, be always gathered in for the large towns of Sivas, Yuzgat, and Angureh, leaving enough for domestic consumption to the agricultural population without. Our march was a continual harvest-time, for the number of weeks occupied in travelling onwards was just the difference required to mark the respective periods at which the sickle is brought into the cultivated plateaux of Asia Minor, in contradistinction to those acknowledged in the plains of Turkish Arabia.

13. We had very little rain or bad weather. Perhaps our hottest days were passed in the Kurdish tents at the end of May and beginning of June, when the thermometer was as follows :—

In tents at	Yarimja, 10 A.M.	100°
Do.	Girdashina, 9 A.M.	92°
Do.	Keremlik, 8½ A.M.	102°
Do.	Zab Su, mid-day,	107-8°

These are the particular hours at which it chanced that a record was taken. Higher figures would doubtless have been shown had all accounts been taken at noon.

14. As regards the more notable products of the soil in Asia Minor, I regret having had no opportunity of visiting the copper or coal mines,* though at no great distance from the former. The vast forests of oak and fir I was able to admire, and also to make inquiries on the cotton cultivation in parts of the country where the plant has been most cared for. A letter which I addressed on this subject to Mr. Cheetham,

* Lead and silver might be added.

junior, of Staleybridge, having found its way into a recent number of the *Cotton Supply Reporter*, I will confine myself at present to a mere mention of the fact that the mind of the Turkish producer is not in a state to admit of his making outlay of his own accord either in the introduction of a new seed or extending the indigenous produce with marked success. He is apprehensive that the price now given for the oka† of 26 piastres would immediately fall to the old figure of 6 piastres if the American War breach were healed. Very good cotton is produced near the Kizzil Irmak, but of short staple. On a specimen sent by me to Manchester it was reported questionable whether, when the long-stapled cottons should have sunk to their old-fashioned level of price, such short cottons as these would not be beaten out of the market altogether.

† 2¾ lb.; and 5½ piastres being about equal to the shilling, the prospective fall would be from about 1*s.* 8½*d.* to 4½*d.* a lb.

15. An hour's halt at the dwelling-house of the managers of the Salt-works between Ulach and Sivas enabled me to make inquiry on a not unimportant item of the revenues in Asia Minor. This place bears the name of Tuzlu Prinwar, the fountain or spring of salt, but its actual realization in coin is set down at no higher sum than 40,000 piastres (about £364) per annum. They explained, however, that it was the total revenue of the Asia Minor salt-springs which was considerable, and that this once formed but a part of the whole system. My informants were managers on the part of Government, receiving a fixed salary to make the most of their charge, but under no contract for a stipulated sum.

16. Asia Minor abounds in hot springs, sometimes hot and cold combined. Among those described in the vicinity of my route were the following:—

1. At the Yelduz Su, about fifteen miles west of Sivas.
2. At Kohineh, near Yuzgat.
3. At or near Amasieh, called 'Kaoza Chermik.'
4. At Kizzilji Kui.

The first I spent a whole morning in visiting. Having ascended a rocky eminence about three or four hundred feet above the level of the surrounding plateau, I came upon a deep fissure in the backbone of a narrow isolated ridge choked up for the most part with wild flowers and

grasses. This led the way to large and small pits or holes which had once evidently been active springs, and eventually to live springs themselves rising in oval or circular basins of tepid water, the largest of which may have been forty feet in circumference. The ridges average perhaps fifteen feet in height; the slopes are gentle, the backbone is sharp. In one place only, among the extinct springs, was the trough of any breadth or extent. Where the springs were active the water was trickling down in all directions. They rise in little globules just about the surface of the basins, and it is difficult to count them. One rises almost in the other, in appearance, from under the water. The neighbouring ground is hard stone and sand. People bathe here, and the waters have healing properties, though I could detect in them no sulphurous smell. I reserved the experiment for Kohineh, where an excellent public bath has been constructed, into which the waters of a hot and cold spring are led in a manner that the supply can be regulated by the bather.

III. The inhabitants, with some account of the larger towns, and matters of general or political interest.

17. Appended is a list of stages from Bagdad to Angureh. For eight out of the first fourteen marches, or up to the Zab Su (ancient Zabates), my bivouac was in a Kurd or Arab tent, and far preferable was this to being quartered in the mosque, konak, out-house, or stable, of a so-called town. In the one fresh air and comparative freedom from filth and vermin were at least obtainable, in the other nothing could compensate for the confinement and uncleanliness. Beyond the Zab we came upon Christian villages, and these continued more or less in the neighbourhood of our road to Mosul up to the banks of the Tigris. We met with others again on moving upwards to Jezireh, and between Jezireh and Mardin there are a considerable number. It was pleasant to feel amid a Christian community, but I am sorry to acknowledge something like disappointment at the first impressions obtained at the Chaldean village of Tell Keif, one day's march from Mosul. Not that there was positive lack of hospitality, but the welcome, such as it was, could scarcely be genial or unmixed with suspicion. However, it must be borne in mind that we were accompanied by Mahomedan officials, a circumstance sufficient of itself to account for shortcomings. The best method of discriminating between the sects I found to be to consider the two great divisions, called in the country Chaldeans (Caldani) and Syrians

Suriani), as no other than Nestorians and Jacobites, the former of these designations being their own, and the latter that applied to them by the Romish section of the Oriental Church, which holds them as schismatics.

18. Of the Arabs we saw little after passing Mardin, or of the Kurds after leaving the banks of the Euphrates. To our hosts among both I have every reason to feel grateful. Their hospitality was plain and straightforward, simple, and void of all ostentation. It was as much the instinct of their nature as the dictate of their religion that it should be offered to the traveller, whatever his rank or creed, and there was no *arrière pensée* of remuneration. No doubt that it is just as well to give on parting a sum of money equal to, if not in excess of, the probable cost of entertainment, but I would add, if opportunity offer, a trifling token of good-will, such as a silk kerchief, or nick-nack for a woman or child. I found this arrangement tell with excellent effect at the villages of Bayat and Izz Oghlu. In the former a poor infant was immediately adorned with the trophy, in the latter it became part and parcel of the new-born hope of a Kurdish family. The appreciation of the gift was so hearty and sincere that I regretted I had no larger supply wherewith to mark our progress westward. But it is not only as furnishing me with a night's or day's lodging and shelter that I remember the Kurds. It sometimes fell to our lot to halt for an hour or so in the midst of a long hot march, and seek refreshment at their hands both for ourselves and cattle. The bread-cake, curds, and omelette, all these were soon got ready and placed at our disposal. These good folks never appeared to be put out or in hesitation while giving us the best of their domestic fare.

19. We had heard of the Yezidis, and passed two or three of their encampments, but it was not our fate to be quartered upon their hospitality. Not so, however, in the case of the Kizzilbashes. Of this class we came upon several villages between the Euphrates and Sivas. To judge from the character given to them by the Turkish telegraph officials, their morals are of the worst description, and they have practices such as are acknowleged by the Yezidis; but I do not put implicit faith in these assertions. Recent inquiries lead me rather to the belief that the fact of their being Shias is the great reason why the Sunni Turks shun and keep separate from them. Among the lower order of Asiatics a distinction of this kind is quite sufficient to account for scandal and defamation up to any amount of invention and falsehood.

I have heard it denied that the Kizzilbashes are even Mahomedans. They did not appear to me Persians, as their name would infer, a name, by the way, which I was warned not to apply to them openly, as they did not accept it with the same readiness with which it was applied to them by others.

20. The Turcomans are numerous in Central Asia Minor, and west of Sivas. Their former social and political importance may be judged by the fact that the large town of Yuzgat owes its rise to one of their Chiefs or Dera Beys. They are a wealthy and well-disposed people, owners of lands, villages, and cattle, but their occupation under the present government appears restricted to farming and agriculture. At the village of Hussun Bey, or 'Bey Obahsi,' about sixteen miles east of the Kizzil Irmak at the Angureh road ferry, I was quartered in a large house belonging to the head man of the place. The servants were ready to provide for the wants of all travellers, and remuneration was strictly forbidden to be received. The inconvenience to an Englishman in this kind of accommodation is its publicity, and there is a disagreeable necessity besides involved of getting up continual conversation with so many strange visitors, few of whom have any interest in a traveller's movements unconnected with personal advantage.

21. Among the many Armenian villages that we passed after once entering the plains of Kharput, we once or twice had occasion to seek a breakfast or a night's lodging, and there was no reason to complain of the reception afforded us. The work of the American missionaries, exclusively with this people, is of a most interesting kind, and my obligations to these gentlemen for their kindness and attention to my companion and myself are not to be easily effaced. A brief report like the present is hardly the proper place to enter into any detailed account of their labours. But I may mention that their presence at Mardin, Kharput, Sivas, and Yuzgat, seemed to me likely to produce highly beneficial results. There is a strange mixture of heaviness and smartness about the Turkish Armenians, a remark which may be said to apply equally to the physical as the moral formation. It struck me that while there were many handsome faces there were few symmetrical forms, and this in the case of both men and women. As a rule all classes speak Turkish, though I am not sure whether as much can be said of their acquaintance with the language of their forefathers.

22. As for the genuine Turks or Osmanlis, the actual rulers of the soil, take them *en masse* there is much to admire. Take them *individually*, and there are doubtless many specimens of humanity which will not only provoke the criticism of their European brethren but oftentimes their hatred and contempt. Take them *by classes*, and although the distinction of high and low, rich and poor, is not defined as with us, there is still the barrier dividing Dives from his humbler fellow, and showing the latter in the far more advantageous light. For my own part I have every reason to be satisfied with the civility and attention shown to me, whether by the officials who met me at various stages, and escorted me from place to place, the kind hosts who received me, or the Pachas and men in authority at the larger towns. In the first instance, and indeed up to Kharput, I had come as a simple traveller, and the 'Buymilti' or 'Perwana' of Namik Pacha with which I had been provided at Bagdad had seldom been required to aid me on the road. But a slight change was perceptible as we entered Asia Minor; and I was surprised to find a regular 'Istikbal' sent out from the Pacha both at Sivas and Angureh. The Pacha of Kerkuk I had not called on. At Mosul we had been lodged by Mr. Vice-Consul Rassam. The Pacha of Diarbekir was most friendly, and it was no doubt at his own instigation, as we knew it to be out of his own kitchen, that his Italian doctor gave us an evening banquet. The Pacha of Kharput was absent on our arrival, at Malatyah. At Sivas we were shown a house assigned to us, but we preferred staying at the Telegraph Office. At Angureh the Pacha housed us, supplied us with servants from the palace, made us live as his guests, and paid us a friendly visit at our lodgings. This was the last headquarters of a Pacha at which I arrived before taking post-horses.

23. I could not avoid remarking two prominent features in the character of the modern Asiatic Turk as he appeared to me in my progress from Bussora to Constantinople—one was his comparative freedom from bigotry and prejudice, the other his general inclination to European customs. It may be that habitual association with the Indian Mussulman had led me to expect a different state of things, and that the contrast presented an unusually strong light. It may be that I lived too much among the servants of Government to judge fairly of the true feelings of the people. Certain it is that if religious toleration is practised under the 'Khat-i-Humayun' of 1856 to an

extent theretofore unknown in European Turkey the spirit of the Act is working also in Asia. But at the same time I would by no means affirm that the so-called civilization of Young Turkey is void of grave objection. The lowest Parisian tastes do not improve, nor does the assumed importance of a London clerk or shopman edify. Knowledge of French in the Turkish army is spreading, and might be turned to excellent account, but it is too often made available for immoral talk and empty display. The attainment to Government employ in demi-European Offices, like the Telegraph, is in like manner frequently made the means of exhibiting an offensive *nonchalance* and indifference to the public. But there is really so much to remedy in telegraphic organization, both in-doors and without, that a passing remark can hardly affect the subject. Not only are messages generally known to the *employés* upstairs, but the menials down below come in for their share of the diffused knowledge. It will require some training to appreciate the necessity of keeping silent on the affairs of others; it will require some strong pressure of practical business to show that what has been imagined a pastime is in reality serious, hard work; and theoretical and practical acquaintance with telegraphy *as a science* will have to be acquired, as well as mere manipulation. These matters have, however, been treated to some extent elsewhere, and reference is accordingly solicited to the enclosures.

24. The chief towns which I visited on my route were—Kerkuk, between the Tigris and the Kurdish hills; Mosul, Jezireh, Mardin, and Diarbekir, in Mesopotamia, reading the name in its literal sense—for all these places are on the right bank of the Tigris,* and consequently between the rivers; Kharput, which some may include with the last four; Sivas, Yuzgat, and Angureh, in Asia Minor.

I was too short a time at Beibazar, Mudurli, and Izmid, to add them to the number.

25. A few desultory notes on each of the above places may not be without interest.

Kerkuk.

The information which enabled me to record that this is a town of about 2,500 houses and 10,000 inhabitants appears of doubtful accuracy. These figures may represent two-

* NOTE.—The main source should be near the Ghyuljik Lake, and still nearer to Argana Muden. But both the Tigris and Euphrates have many sources, for every feeder may claim its right to partnership.

thirds of the real number. There is an upper and a lower town, the former enclosed within walls, and covering the flat top of an abrupt hill about 150 feet high; the latter, scattered over the plain below Kerkuk, is the seat of a Pacha, who is under the authority of the Governor General of Bagdad. We were housed in the lower town, which is very filthy. The streets are irregular and ill-constructed. There are a few shady and pleasant fruit-gardens, to which the inhabitants resort in hot weather. The Telegraph Office is a large and roomy building, but the Pacha has converted the best part into a prison! There is something picturesque in the first view of Kerkuk. It looms out in the distance like the background of an Oriental stage melodrama. It is just the sort of scene which would foreshadow the coming of the conventional stage Pacha, accompanied by Turks, Arabs, Kurds, men and women, with scimitars and choruses. The more classical and famous Arbeil, or Arbela, which we passed without entering on our third march from hence, is about 55 miles off in a northerly direction, and has a very similiar appearance. I was told there were two Chaldean churches at Kerkuk. The mound on which the citadel is built is probably artificial.

Mosul.

26. Mosul is too well-known from the works of recent travellers and explorers to need any particular description. Nearly thirty years ago Mr. Southgate, a missionary of the American Protestant Episcopal Church, estimated its population at 40,000, of which 6,000 were Christians. The accounts given me were conflicting, but I am of opinion, on good authority, that the proportion of Christians to the whole number of inhabitants is greater than fifteen per cent. Before crossing the Tigris to the town we looked at the scene of the Nineveh excavations, and entered the Mahomedan musjid at Nubbi Yunas. Mr. Rassam thinks this last must have been at one time a temple of fire-worship, from the blackened apppearance of the roof. The town of Mosul is dirty and irregular, but its Moorish doorways are pleasant to the eye, and there are many quaint old-fashioned figures seen beside them which almost recall forms and faces of our own country in the reigns of Henry VII. and Edward VI. Some of the children are especially beautiful. I was introduced here to the Chaldean patriarch, a Chaldean bishop and Syriac bishop, of the Romish Church, and visited with the latter the Chaldean church

of the 'Miskinta' and his own cathedral. All are built of marble, obtained at a comparatively trifling cost in the neighbourhood of Mosul. The interior of the cathedral is well proportioned. It has its two aisles and altars, and the centre archway and altarpiece are remarkably handsome. It appears that these churches have communication with those of Malabar, and are a branch of the Romish Propaganda. The Telegraph Office is a good, roomy building, situated near the Pacha's palace. I have already remarked on the utter uselessness of bringing the telegraph wires to Mosul at all. It is perilling the whole line of telegraph to suit one man's convenience. Were the station on the other side of the Tigris a single wire might, if necessary, be supplied to the Pacha; but at present the two wires from Constantinople and two from Bagdad are all dragged across the most precarious bridge and ferry, for no necessary object whatever, and at enormous risk to our Indian communication, especially in the spring of the year.

Jezireh, on the Tigris.

27. Once the principal city of the Chaldeans in the low country. Its towers and walls and ruined Moslem bridges are picturesque in their way, but the place is unhealthy and unattractive as a residence. I have no data of the number of inhabitants, but should not put them down at 10,000. It is famous for a striped cotton cloth, which may be used as the 'Lungi' or waist-band of Sind, or as a hat-turban. The Telegraph Office is a barn, and a most unsavoury one, yet it appeared to be the best place in which we could find accommodation. I was glad to leave the town after a day's halt there, and seemed to breathe more freely on attaining the summit of the high land behind it, and overlooking the valley of the Tigris.

28. We arrived here at about 1 P.M. on the 17th June, an intensely hot day, riding up a good road from the foot of the hill to the gate of the town. From this point to the Telegraph Office our passage was along a dirty, steep, and stony street. We enjoyed a cool breeze on opening out the southern aspect of the hill, and a grand view across the wide plains of Mesopotamia, comprising a vast extent of low, level country so far as the eye could reach. Mardin is picturesquely situated on the slope of a limestone rock, the apex of which is surmounted by a remarkable and ancient fort. The houses of the town are solid, and many comparatively good, but there is dirt and misarrangement everywhere. The Telegraph Office is small, and most

inconveniently situated for the security of the whole line, but the instruments appear to be well cared for and in good order. Mr. Williams, the intelligent American missionary here, reckons the population of this place at about 22,000, of whom one-half are Christians. Two-thirds of these, again, are put down as Roman Catholics; so that 7,000 Papists and 3,500 non-Papists may be held to represent the approximate number of each division. Mardin merits a much longer and more detailed description than can be given to it in the present report, for it is a place of much historical and local interest, and there is a host of legends commemorating its importance, and relating to its immediate neighbourhood. The inhabitants are called Mardili, and the Mahomedan portion consists chiefly of Arabs and Kurds, the common language of the market being Arabic. Mr. Williams thinks there are no Roman remains here, certainly no walls. It may be that the vicinity of Dara and Nisibin gave rise to the supposition. The light cloak or 'Aba' of Mardin is an elegant and inexpensive article of manufacture, highly prized by those who have seen the better specimens. The government here is exercised by a 'Majalis' or assembly composed of mixed Mahomedan and other members, and presided over by a 'Kaim Makam,' under the authority of the Pacha at Diarbekir.

29. Once a place of much commercial importance, and although not up to the mark of former prosperity its central position would seem sufficient to preserve it from decay. I learn that there are about 20,000 inhabitants, of whom nearly half are Christian. Mr. Southgate reckoned that there were about 2,700 families, of whom 1,500 were Mussulman, and this statement rather serves to corroborate that made to myself than otherwise. The town is agreeably situated on the right bank of the Tigris, and there are neat little country-houses outside the walls, which make a residence there tolerable. But the heat is very great, and, like all Asiatic towns, the streets are irregular and confined. The Telegraph Office, where we resided, enabled us to prove the climate within the walls. I was eager to escape from it, notwithstanding an intelligent host and hospitable reception. From hence there is a line of telegraph with two wires leading to Orfah and Aleppo.

Diarbekir.

30. While halting for a day at Diarbekir a native of India was brought in by the Mudir or head of the office, and presented to me as

Haji Baba, an astrologer. I did not much like his looks: he might have been a mutineer, a refugee, anything. To my thinking the face was that of a ship-lascar, or little better, but the man had a wonderful smattering of knowledge. He had no look of the higher-class native. With a dash of the Faquir there was something besides of the ordinary Munshi or teacher of Hindustani. He had a dark and unmistakeable Indian skin and complexion: his long, oiled, and curved hair was combed down behind the ears: his manner was such as I have often seen in Indians desirous to dazzle by display of general knowledge. He took occasion to show off his handwriting, and to talk of officers whom he remembered, at least by name (Roberts and Wray). I was puzzled to think who this man was, whence came his fine clothes, and when and why he had left his native country. His own history was that he lived in the Bendi Bazaar at Bombay, that he had quitted India about fourteen or fifteen years before the annexation of the Punjaub, that he constantly travelled, had visited Bokhara and Astrakhan among other places, and had heard of Colonel Stoddart, though he knew little about him. His age might be thirty-five, but it is hard to say exactly. They told me that he practised as an astrologer, but took no money; that he appeared to have a sufficiency both of money and clothes. He had seen and conversed with Mr. Taylor before he left, but that gentleman was away from Diarbekir at the period of my visit. The man spoke Arabic awkwardly, but well for an Indian; his Persian was Indian and fluent, his Hindustani was naturally faultless.

Kharput.

31. Though Kharput is the name given to the Telegraph Station, the real Kharput is at about three miles' distance, at the summit of a hill not far from a thousand feet in height. The Telegraph Station is where the Pacha's serai is, at Mazra, on the plains below. The derivation of the word 'Kharput,' or 'Harput,' was explained to me to be from two Armenian words, signifying 'stone castle.' Mr. Brandt and Lieutenant Glasscot estimate its height at 4,832 feet above the level of the Black Sea. The view of the Kharput plains, coming up from the Deva Boyun mountain, to the southward, is magnificent. Some idea of the extent of low country may be formed from the statement that the Murad Chai (or Upper Euphrates), one of the largest rivers of Asia Minor, appears like a minor canal or stream in the midst of the plain through which it winds.

I observe that the population of Kharput is estimated at 1,720 families. This would not, of course, include Mazra, a place which resembles in the distance an Indian cantonment rather than a common Asiatic Turkish town. Besides the Pacha's residence and Telegraph Office, it contains also the 'Kishla,' or barracks for troops. The productions of the soil in the plains here are abundant, and the numerous villages seem rich and flourishing. The bazaars in Kharput are not remarkable. The Amerians are the bulk of the Christian inhabitants. Schools have been opened by the American missionaries, who have also a chapel for the Protestant congregation.

32. We descended into the plains on which Sivas is situated, from a considerable height, crossed a bridge over the Kizzil Irmak, built by Sultan Murad, and entered the city. Its aspect from without is pleasing. Dotted here and there with trees, at times in large extended clusters the houses and citadel occupy a considerable space, and are much scattered. Dr. West, the American physician resident here with the missionaries, a gentleman of unusual experience in these parts, reckons the population at about 40,000 to 50,000 souls, and the Armenians to have more than 2,000 houses, which might represent a fifth part of the whole. The climate is delightful in the hot weather. We were here in the middle of July, and the thermometer was 78°. There are many interesting monuments at Sivas. We visited what are called (generally) the tombs of the Seljuki. Germanize the pronunciation and we may read 'Seleucidæ,' according to Mr. Latham's ingenious and not unlikely theory. These are truly fine buildings, but from the inscriptions appear to have been erected at no earlier date than 670 of the Hejra, about A.D. 1271-2. The actual tombs may, I think, be traceable to an earlier period. They are stated to be those of Kai Khosrou and Kai Kobad, but the inscriptions above the door gave, so far as I could decipher, Kai Khosrou only; and may not this be a mere title? The main buildings are two quadrangles, one facing the other, in a narrow street, with remarkably fine gates, the largest of which may be seventy feet in height, with two cupolas or minars of forty feet. There is another building of a similar kind at a little distance, but all seem to have been comprised within one set of strong stone walls, probably the ancient Sebaste. The one quadrangle contains the Medresseh and Turbet, the other may have been the mosque. Sivas was un-

Sivas.

doubtedly at one time under Persian occupation. Marco Polo writing in 1213, describes the Greater and Lesser Armenia, and places Sebaste, as the king's residence, in the latter. Wine is made here, but not nearly so palatable as that of Kharbut. I met another Indian at this place. He is said to be a petty trader, but is treated with much more regard by the Turks than his appearance would warrant.

Yuzgat.

33. The town of Paswan Oghlu who, according to good authority, held an independent dominion over all the east of Asia Minor. Yuzgat is still an important place, and may have its 10,000 or 15,000 inhabitants. There is something very desolate and dreary in the approach to it through the hilly country on the Sivas side, but its mass of houses, interspersed with mosques and minarets, breaks upon the traveller with much of Oriental beauty and effect. The Telegraph Office is situate in the heart of the town, and nothing can be worse or more slovenly than the mode in which the wires find their way out to the posts on the Angurch road. I attended one Sunday at Yuzgat the Protestant service at the American Mission Chapel. The missionary, Mr. Farnsworth, performed the whole in Turkish, and preached with great ease and fluency. There were about a hundred present. I myself counted thirty men and fifty boys, and I was told that there were more females than enough to make up the three figures. These are separated from the rest of the congregation by a wooden trellised wall. They can be seen, and their children heard, but that is all. The arrangement is a good one for an Eastern country. There were three or four good faces among the boys, but on the whole the congregation looked not only poor, but untidy and far from clean. I may add that one or two exceptions were notable, and it was an agreeable surprise to me to find that after the service some half-dozen very respectable-looking men came up spontaneously to shake me by the hand as a newcomer. Many boys were tired, some unsteady; but as a whole this Armenian Protestant congregation was very orderly and attentive.

Angurch.

34. The Turkish pronounciation of this word, which we sometimes miscall 'Angóra,' is one which would induce me to spell it 'Engurch.' It is a place of great interest, both from its very remarkable Roman remains and its own picturesque beauty.

Its historical associations are, moreover, such as to ensure for it the attention of all inquiring travellers. I could do little more than ride round the base of the hill, and admire the landscape. The southern aspect of the citadel was that which struck me the most, when the fort was divested, as it were, of the town, and stood out alone in real grandeur. I never saw a much more picturesque effect of the kind: it was not unlike what many of us must have often admired in the Castle at Edinburgh. The morning after arrival I was able to pay a hurried visit to the Roman hall, where the monuments and inscriptions are still in excellent preservation, but the necessity for my early departure, in answer to a telegram from Constantinople, prevented me from attempting any researches. Murray estimates the population at 20,000, of whom a third are Armenians. This certainly does not appear an overstatement.

35. The famous goats, producing a wool renowned over Europe, are exquisite little animals, and abound in the vicinity of the town from which they derive their name. It is said that they are only found within certain circumscribed limits, which may be defined as between the west bank of the Kizzil Irmak and Sevri Hissar, the latter place marking the most southerly point, and the Black Sea being the northern boundary. A space of five hundred geographical square miles may here be assigned, from which removal would cause deterioration. It is a known fact that if transferred to the east bank of the Kizzil Irmak they suffer from the *mal du pays*. Many are lost from exposure, but the losses are made up for by breeding with common goats, and caste is supposed to be recovered in the third generation. The Angurch goat gives one oka, or forty-four ounces avoirdupois, of wool; and the quantity supplied throughout the wool region is estimated at from 350,000 to 400,000 okas, *i.e.*, 962,500 lb. to 1,100,000 lb. From the same authority it appears that 40,000 okas (110,000 lb.) are expended in thread manufacture in Asia Minor itself, of which more than half is sent to Holland, and 8,000 to 10,000 okas (17,500 lb.) are converted into home-made shawls and stuffs.

36. That the present report is necessarily rambling and meagre will, I trust, be excused from the circumstance that I have no office, and few references besides my own diary and notes. These, if I were to draw on them too freely, would lead me into questions foreign to

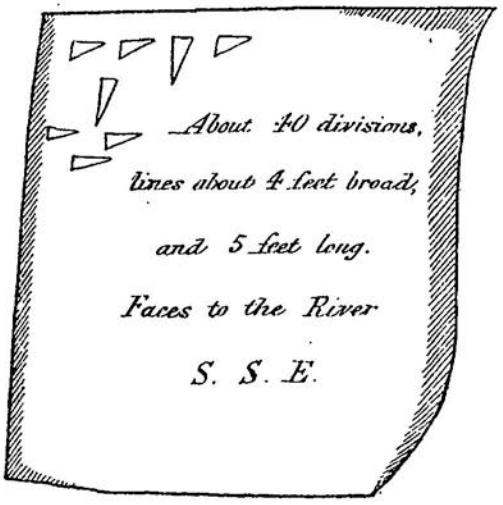
the purpose. I will now conclude by a brief account of the lake known as Ghyuljik, and an inscription observed on the left bank of the Euphrates near the Malatyah ferry.

37. 'Ghyuljik,' the 'little lake,' is situated lat. 38° 25′ N. and long. 39° 30′ E., between the mountains known as Batman Dagh and 'Deva Boyun,' or 'Camel's Neck,' overlooking the vast plains of Kharput. Its extreme length, from E. and by N. to W. and by S., is barely ten miles, and it may have, at most, four miles of breadth. On its southern side is a village of about twenty Kurd houses, and a larger one, bearing the name 'Ghyuljik,' of fifty Raya or Christian houses. There are also some eight or ten houses on the northern side; there is a village about six miles to the west, and Kizzin is about a mile and a half on the east. The lake is surrounded by high hills which come down into its waters, but there is a small open space on the Kizzin side. These hills have a green appearance when seen close, but at a distance look sufficiently barren to make the blue waters of the lake a charming contrast.

The temperature of the water was found to be 68°, the air being 80°. I brought away a flask of the water for analysis, and the following is the result arrived at by Mr. Squire, the London chemist:—'Remarkably soft, being almost entirely free from lime and magnesia salts. Its hardness may be described as being only one-third that of Thames water. A gallon of water contained ninety-two grains solid matter, which consists almost entirely of chloride of sodium. The water also contains a certain amount of organic matter.' The assurance that the waters of this lake were salt, and my own uncertainty on the subject from taste, caused me to put the question to proof. Its miniature waves and blue appearance rather favour the belief of the peasantry. The Kurdish village is at the widest part of 'Ghyuljik,' and is prettily situated in a small bay among trees. A boat is kept by the Rayas, attached to whose village was once a monastery, long ago cut off by the waters. The building is now seen in its isolated position, at a considerable distance from the opposite high land. The telegraph line runs, with its usual unromantic determination, close by the eastern head of the lake.

38. I had come down from the high table-lands of Kharput into the valley of the Upper Euphrates, meeting the river at the ruined caravanserai of Sultan Murad, and had not moved far along the left bank when the Chaosh or Turkish telegraph official who accompanied me

called my attention to a cuneiform inscription on the perpendicular face of a rock almost in our track. It was in proportion much as follows, and I would commend it to the notice of those more capable than myself to decipher its meaning :—



The rock is not a high one, and the stone on which is the inscription falls in to some extent, so as to be framed by the outer portion of the rock. No doubt this has already been noticed by travellers, but I have hitherto been unable to ascertain the fact. The letters are arrow-shaped, but have a look of Sanscrit in their lining and indistinctness. The large village of Izz Oghlu, on either side of the Euphrates, is about five miles further up than the locality of this inscription.

Memorandum of Marches from Bagdad to Angureh.

1	Jedideh	19th	May.	21	miles.	Large village.
2	Yenijeh	20th	„	15	„	Village.
3	Dizhdari.....	21st	„	24	„	Arab tents ; village.
4	Rametat.....	22nd	„	10	„	Arab tents ; no village ; plains.
5	Kara Teppeh ..	23rd	„	23	„	Large village.
6*	Kifri	24th	„	17	„	Turkish town.
7	Bayat	25th	„	19	„	Arab tents.

8	Zind	26th	May.	20	miles.	Kurd tents.
9	Taza Khurmati	27th	„	22	„	Large village; 300 houses.
10	Kerkuk	28th	„	14	„	Turkish town; 2,500 houses, 10,000 inhabitants.
11	Yurimja	30th	„	16	„	Kurdish tents.
12	Girdashina	31st	„	19	„	Ditto.
13	Kerimlik	1st	June.	24	„	Ditto.
14	Zab Su	2nd	„	20	„	Ditto, both banks
15	Shah Kully	3rd	„	19	„	Village.
16	Mosul	4th	„	16	„	City.
17*	Tel Keif	7th	„	10	„	Chaldean village.
18	Fayida	8th	„	20	„	Village.
19	Girk Osman	9th	„	21	„	Kurd village.
20	Karola	10th	„	22	„	Kurd tents; right bank of Khabur.
21	Jezireh	11th	„	20	„	Large town, formerly of importance.
22	Azukh	13th	„	18	„	Syrian village.
23*	Ba Sabirin	14th	„	16	„	Ditto with old monastery.
24*	Middiat	15th	„	21	„	Ditto.
25*	Kherbat Tao	16th	„	18	„	Small village.
26	Mardin	17th	„	21	„	Large town; population 22,000, half Christian.
27	Sheikhana	19th	„	15	„	Two or three tents.
28	Ak Punwar	20th	„	27	„	Small village.
29	Diarbekir	21st	„	18	„	Large town.
30*	Dimika	23rd	„	20	„	Kurd tents.
31	Argana	24th	„	15	„	Large village.
32*	Topal Usak	25th	„	19	„	Small village in the mountains.
33*	Kizzin	26th	„	14	„	Village near Lake Ghyuljik.
34	Kharput	27th	„	21	„	Large town of Turks, Armenians, &c., &c.

35	Khan Kui	1st	July	10	miles.	Small village.
36*	Izz Oghlu	2nd	„	22	„	Large Kurd village, on either side the Euphrates.
37	Burana	3rd	„	17	„	Small village.
38	Hassun Badrick.	4th	„	16	„	Large village, Kizzil-bash.
39	Hakim Khan ..	5th	„	18	„	Ditto.
40	Hassun Chelibi.	6th	„	14	„	Ditto.
41*	Allaja Khan ...	7th	„	20	„	Village of 60 houses.
42	Kangul	8th	„	15	„	Ditto.
43	Delikli Tash ..	9th	„	12	„	Ditto 40 or 60.
44	Ulach	10th	„	12	„	Ditto of 60 houses, many Armenian.
45	Sivas	11th	„	20	„	Large town; 10,000 houses.
46	Munteshir	16th	„	21	„	Small village.
47	Kawak	18th	„	15	„	Large ditto.
48	Ekkejik	19th	„	16	„	Small ditto.
49	Mashallum Killasi.	20th	„	20	„	Large ditto.
50	Kara Maghara .	21st	„	18	„	Ditto.
51	Kohineh, or Kuvneh.	22nd	„	18	„	Ditto; hot springs.
52	Yuzgat	23rd	„	18	„	Large town; 5,000 houses.
53	Gootlek	25th	„	18	„	Small village.
54	Israel-li	26th	„	21	„	Turcoman village.
55	Bey Obahsi....	27th	„	23	„	Ditto.
56	Yekhshi Khan .	28th	„	16	„	Ditto on Kizzil Irmak.
57	Hassan Oghlan .	29th	„	19	„	Ditto.
58	Angureh.....	30th	„	20	„	Large town.

Total miles.... 1,054

Carried forward..... 1,054 miles.

Brought forward..... 1,054 miles.

Distances of places marked* revised as follows :—

18	in lieu of	17	
11	,,	10	
18	,,	16	
22	,,	21	
20	,,	18	
21	,,	20	
20	,,	19	
15	,,	14	
23	,,	22	
21	,,	20	= 12

Total miles..... 1,066

Art. III.—REMARKS on the PEARL OYSTER BEDS in the PERSIAN GULF. *By Lieut. Col.* Lewis Pelly, *Her Britannic Majesty's Political Resident, Persian Gulf. Contributed by Government.*

Read before the Society, February 16th, 1866.

While recently on leave of absence in England several gentlemen in the scientific world requested information from me concerning the Pearl Oysters, and concerning the shells in general of the Persian Gulf.

2. I gathered from Mr. Gwyn Jeffreys (an eminent Conchologist, and author of the best standard works on the mollusca of the British seas) that in a conchological point of view the Persian Gulf is wholly unexplored.

3. I am collecting, to the best of my ability, the shells of the Gulf, and in the mean time I have the honour to submit a few remarks concerning the Pearl Oyster Beds. These beds extend at intervals almost along the entire length of the Arabian Coast of the Gulf from a little below the port of Koweit to the northward, down to the neighbourhood of Rass-ool-Khaimah, southward. There are also some beds near Karrack and at other points on the Persian Coast line, but these latter are of comparatively little account as being far less extensive, less prolific, and less lucrative.

4. The beds along the Arabian Coast are held to be the property of the Arabs in common; for instance, an Arab of Koweit may dive along the Bahrein or Rass-ool-Khaimah Coast and *vice versâ*. But no person other than the Coast Arabs is considered to have any right of diving. And it is probable that any intrusion on the part of foreigners would create a general ferment along the Coast line.

5. The richest banks are those of the islands of Bahrein. They are found at all depths from a little below high water mark down to 3, 7, 12, 17, and 18 fathoms. It is probable that there are beds at a much greater depth, for instance, if, as is supposed, it be the fact that there are beds in the inlets of the Mussendum promontory, these beds must have a depth of 22 or 25 fathoms. It is held as a rule that the lustre

of the pearl depends on the depth of the water, the greater the depth the finer the lustre. There does not seem to be any known law governing the more or less perfect sphericity of the pearl. The best Oyster beds are said to be level, and formed of fine whitish sand overlying the coral in clear water. A mixture of mud or earthy substance with the sand is considered to be detrimental to the pearl; and the beds having this defect are liable to exhaustion. It is to this cause that the Arabs of Bahrein attribute the exhaustion of the pearl beds on the Coast of Sind and Ceylon; while the beds of the Persian Gulf, although annually fished, from the earliest historic periods, continue prolific as ever: one or two of the most recent past years having given a more than usually abundant return. The notion that the Arabs feed their Oyster beds at particular seasons of the year, seems to be erroneous. No care whatever is taken of the beds. The Oysters swill about over the sand or slightly attach themselves by the hinge to bits of sea-weeds or coral, and are discerned by the divers from their boats in groups below the clear water. The diving period is from the warm spring in April to the end of the hot summer months of August and September.

6. There may be from four to five thousand fishing boats along the entire Coast, each boat containing from 10, 20, to 32 men. Of the above number of boats some fifteen hundred may belong to Bahrein.

7. As regards profits, each boat is a partnership: the profits being divided into ten shares, of which—

The Owner and Captain get.....	$\frac{2}{10}$
The Divers	$\frac{3}{10}$
The Rope-holders.....	$\frac{2}{10}$
And the rest is laid out for provisions...	$\frac{3}{10}$

A few of these boat-men may reap independently the fruits of their own labours. But the great majority are in the hands of agents of Pearl merchants, whether Hindoo or other, who reside in the towns of the littoral. These agents make advances of money to the divers during the non-diving season, and when the spring comes on, the boats are supplied with so many days' dates, rice, and other provisions and start away for the banks, returning as provisions fail or weather compels.

8. Hundreds of boats may be seen anchored at a time on the banks. As a rule the diving may be in water of four to seven fathoms

in depth. Fifteen fathoms a diving is considered to be extremely prejudicial to longevity, and occasionally proves fatal. In any case the crew is told off into divers and ropeholders, the former diving while the latter keep the boat and stand by to haul the diver up. Each diver has his comrade for this purpose. The diver strips, closes his nostrils with horned-pincers, has a rope attached to his girdle, and a stone or other weight to his foot. He then drops over-board feet foremost, and on reaching the bottom collects his Oysters until he can no longer remain below, when he pulls at the string, lets go the stone weight and is hauled on board by his comrade. The stone weight is attached to a second rope, by which it is afterwards hauled up. The Oysters are collected into a bag or other receptacle attached to the diver's chest and waist.

9. Of course numerous disputes occur among so many boats jostling together in a comparatively small area. In former times these disputes were frequently serious and attended with bloodshed; but more recently the several Arab Chiefs of the littoral have entered into a maritime truce, binding them to refer all their disputes at sea to the arbitrament of the English Resident in the Persian Gulf.

10. The annual outturn of the pearl fisheries is assumed to be as follows:—

Outturn of the Bahrein Pearl Divers, 20 lacs of Rupees or	£200,000
Outturn of the Divers from the Arab littoral of the Persian Gulf other than Bahrein, 20 lacs of Rupees or	£200,000
Total.....	£400,000

11. The revenue levied by the Chiefs themselves on the Pearl fisheries consists in a poll-tax of one dollar per annum on every diver, and on every diver's attendant rope-holder. The revenue so derived by the Bahrein Chief may be about 50,000 dollars, thus representing 25,000 divers and 25,000 rope-holders, and amounting to 5 per cent. upon the total outturn.

12. The great bulk of the best pearls is sent to the Bombay market, where, during the late share mania, fancy prices were given for good pearls. A large number of pearls is sent towards Baghdad.

As a rule the Bombay market prefers the pearl of yellowish hue and perfect sphericity, while the Baghdad market prefers the white pearl. The small seed pearls go principally to Baghdad also.

13. I have collected specimens of the Pearl Oyster from the beds of Bahrein, together with some of the sand coral, and sea-weed picked up near the Oysters. These I propose to send to England.

14. It has occurred to me that it might possibly be of use if a few hundreds of Oysters from the Persian Gulf beds were to be sent to Ceylon, in view to ascertaining whether any defined locality, in which they might be bedded, could be developed and remain exempt from exhaustion.

15. If Government should deem fit to cause this letter to be printed, I would respectfully request that printed copies might be sent to Gwyn Jeffreys, Esquire, 25, Devonshire-place, Portland-place, London; and Clement Markham, Esquire, India Office, London.

Art. IV.—MEMORANDUM of NOTES on MEKRAN; together with a REPORT on a VISIT to KEJ, and Route through Mekran from Gwadur to Kurrachee.

By Lieut. E. C. Ross, *Assistant Political Agent at Khelat.*
Contributed by Government.

Read before the Society, February 16th, 1866.

Mekran is that portion of Beloochistan which extends from Persia, east to the frontier of Beyla; bounded on the south by the sea; the Much or Wuhushtee mountains, and Seistan deserts mark its natural limits to the north.

In early times, it is not unlikely that Mekran formed one of the satrapies of the great Persian empire; and though the distinct nationality acquired by the inhabitants is marked at the present day under the name of Belooch, some traces appear in their language of an early affinity to the Persians.

That the Mekran Beloochees of the present time are a mixture of very many different tribes, who have, at various times settled in the country, is not only in accord with their own traditions, but evidenced by marked variations in shade of colour, and physiognomy. This fact tends somewhat to complicate inquiry into their origin. But one language, with slight variations of patois, is current throughout the whole region, and this may reasonably be supposed to be that of the first inhabitants, subjected, as it would be, to after changes. Assuming this, the simplest plan would appear to be, to trace this language to its source, to arrive at an approximate conclusion as to the origin of the root-race. A few passing suggestions may not be useless on this subject, with a view to further inquiry, the object being to propose the theory that the Beloochee of Mekran, is, in point of fact, Persian, not the Persian of this era, nor a corruption of it, but a branch from an ancient stem, carried by the first settlers from Iran into Mekran, where it has not flourished, but become much changed, and still more rough, by the adoption of barbarous words contributed by subsequent arrivals from other regions. In support of this theory the following points are noticeable:—

1*st*. Many words used by the Beloochees, which would at first sight appear to be corruptions from the Persian, are not corruptions, but agree exactly with the ancient forms before the Persian of Iran had been rounded off, and polished to suit more civilized ears. For example, the words "Pít" and "Mád" (father and mother) are not clipped forms of the modern words "Pider" and "Mader," but actually correspond with the original ancient forms.

2*ndly*. There are a number of words current in Mekran, which have fallen into disuse in Iran, and are seldom met with in modern books. A person addressing a Mekranee in the Persian Ferdos, would, it is thought, have a better chance of being understood than if he used the more modern language.

3*rdly*. The structure of the modern Belooch language does not seem to warrant belief, that any other than Persian was the parent stem. Probably on comparison Mekran Beloochee will be found considerably to resemble the patois of the Dehatees, or rural population of Persia. Perhaps this, if established, would warrant the conclusion that the Mekrances are of Persian descent. The absence of any Arabic words from this language would seem to show that there was never any permanent settlement of Arabs in Mekran. The Beloochees and Arabs have many characteristics in common, but so have all pastoral people.

There seems but little likelihood of any definite information being forthcoming regarding the ancient history of this country, but there will be no harm in assuming as a theory that having originally been a Persian province, remote and scarcely known, it gradually acquired an independent position under Native or other rulers. A State was formed somewhat on the model of the great empire. Its districts became provinces, each having its hereditary Governor, a member of the dominant family. These Chiefs, then, in time, acquired almost the power of independent rulers; but the whole formed a Federation united under one supreme and sovereign Prince, who received tribute, and to whom all disputes were referable. The head of the Federation was the ruler of the Central Province of Kej. Subordinate powers were further vested in the petty Chief of districts and dependencies.

Such a Federation seems specially adapted to the character of the Beloochees, and it is affirmed that such an arrangement actually

obtained in Mekran under the Maliks whose rule seems to have terminated in the latter part of the 17th century. There is no local account to be had of Mekran history previous to this overthrow, nor does it seem to be known whether they were of Belooch extract, nor whether Malik was their title, or family name.

The foregoing suggestions, which will be taken for what they are worth, are meant to be introductory, the object in view being to bring forward the local version of the history of Mekran, subsequently to the time of the Maliks, which is preserved in the ballads and traditions of the Natives. Few sources of further investigation being at hand, few corrections are attempted. It is, however asserted that works on Mekran exist, and are to be found in Kerman; if so, the information contained in them would no doubt be interesting, and a history otherwise irretrievably lost might be brought to light.

I will now endeavour to throw into somewhat connected form, such accounts of the history of Mekran for the past two centuries or so, as are still preserved in tradition, and have been communicated by the best informed Natives I have had opportunities of conversing with; availing myself of a few reliable facts from contemporaneous Persian history, to make some corrections.

II. Notes on Mekran History.

Native tradition goes back to a period when Mekran, as an united independent country, was ruled throughout its extent by a dominant family known as Maliks. Under them it was constitutionally a single State, but divided into several general governments or provinces, each held by a Malik, having absolute power in his own province. These again were sub-divided into districts and dependencies, immediately governed by hereditary petty Chiefs.

These provinces composed a Belooch Federation united under one supreme authority (always the Ruler of the Province of Kej), who received homage and tribute from the rest, and to whom all quarrels amongst members of the Federation were referred, and under whom they all united their forces to repel attacks from without, or invade the territory of common foes. It is not, however, asserted that all the provinces were members of this Federation in the latter days of Malik rule. Some may have seceded earlier. One of these Princes is said to have erected a large pillar, a little to the eastward of Minab in Persia,

or in about 58° East longitude, to mark the boundary of Mekran and Persia. This place is known as "Malik Cheedar,"* and the pillar is said to be standing. The chief provinces were, according to Native account, the following :—Bumpoor, Kej, Punjgoor, Toomp, Dizak, Gaih, Sirbaz, and Kussurkund. Mekran has further been divided into two geographical divisions: "Kej Mekran" comprising the eastern provinces, and "Ruhana or Rodkhana Mekran," which takes in all to the westward of Kej, so called from the abundance of irrigation it possesses compared to the dry eastern tract.

* Cheedar means Hadd or boundary.

The Maliks were ousted by a family named Boleidee, probably in the latter part of the 17th century. From that time there was little attempt at union of provinces, and as their fortunes were dissimilar it will be convenient to sketch those of the two geographical divisions separately, dwelling principally on the Eastern or "Kej Mekran."

The provinces were Kej, Punjgoor, and Toomp ; the capital of the first, Kej, where is a large fort called the Miri, being the seat of supreme authority. The two latter provinces having participated in the changes which followed the downfall of the Maliks need not be specially alluded to. The province of Kej was the largest, as well as most important ; amongst its dependencies were Gwadur, Pussnee, Ormara, Kolwa, and Kolanch. Its ruler resided at Kej, and occasionally at Gwadur. The family of Boleidees acquired great influence in this province in the days of the later Maliks, who are said to have been surrounded by a staff of Wuzeers of that family. The Malik of Punjgoor drew the attention of the Malik of Kej to their growing insolence, and a plan being arranged, a member of the principal Boleidees was murdered. The remainder, indignant, raised a revolt, which had a successful result. The Maliks were driven out of "Kej Mekran," and many of the western provinces. The Boleidees usurped their places, and exercised authority in the acquired provinces, preserving the same system, and acknowledging the Chief of Kej as their head. The Boleidees seem to have ruled under the title of Ameers.

The duration of the rule of the Boleidee Ameers in Kej, must have been limited to about three generations. It is at least certain that they were no longer in power there till the year 1739. A peculiar reli-

gious faith took rise, and spread over all Mekran, about the era of the Boleidees, and the majority of the inhabitants, including the Ameers, embraced this new faith, whose followers style themselves Zikrees. The name is derived from their habit of repeating a set formula, "Hadi Mehdi" [Mehdi is our guide] which serves for all devotional observance: they believe that this last and greatest of prophets, Mehdi, appeared in Kej, and having brought a new dispensation, abolished all older forms of religion. At the present time this sect is tolerably numerous in some parts of Mekran, but the most respectable portion of the inhabitants have returned to Islam, and the Zikrees, though unmolested, are no longer held in good repute.

In the latter part of this period Poordil Khan, a Nowsherwanee Belooch, and native of Kharan, acquired great notoriety in Mekran. He is the favorite hero of the Mekranees, and his exploits form the burden of most of their ballads. His achievements have little to do with Mekran history, but the Mekranees mix his name up so with it in their somewhat confused accounts, that it is well to assign him his proper position, which may be likened to that of Rob Roy Macgregor, of Highland renown. His life was spent in raiding, and not content with looting the adjacent Mekran districts, he boldly entered Persian territory, and much to the approval of all Beloochees, succeeded in carrying off large booty from Minab in Persia. His forays at length attracted the attention of Nadir Shah, who took measures to effectually crush him. Reduced to extremities Poordil Khan fled first to Khelat, and then to Sind, but obtaining no aid from the rulers, resolved to throw himself on Nadir's mercy. His bold avowal of all his hostile deeds so took that monarch's fancy, that he was not only forgiven, but a force placed at his disposal to enable him to make himself master of Kej Mekran, of which he was promised the government; he is said to have set out on this expedition, but ere reaching Kej was seized with small-pox and died, on which the expedition was broken up. Much of all this is probably fabulous, but an expedition later against the Kharan Beloochees, and their chastisement are mentioned in the Life of Nadir. The present Azan Khan of Kharan is a descendant of Poordil Khan, and seemed recently to have a notion of emulating the deeds of his renowned ancestor.

Vide appended Extract, No. 2.

Some time between the years 1730 and 1740, Sheik Bilar Boleidee

was Chief of Kej. He was accustomed to reside much at Gwadur, where he was induced to throw off the Zikree faith, and embrace El-Islam. This act appears to have given offence to the majority of his subjects, and Malik Deenar Gaitchkee, who was the spiritual leader of the Zikree sect, incited the people to revolt, and wrested the principal fort of Kej from Sheik Kasim Boleidee, the nephew and representative of Sheik Bilar. The latter, on this news reaching him, hastened to Kej, but was ill received, and fled to Toomp. There also the people were against him, and he was attacked and wounded. Taking the road towards Gwadur he was pursued, and finally murdered by the side of a fountain, since known as "Sirdar Al."

Kej, Punjgoor, and Toomp then fell into the hands of the Gaitchkees, and Malik Deenar assumed the chief authority. Struggles ensued in the western provinces also between the two families, with varying success; but most in that quarter finally remained in the hands of the Boleidees. In this manner another split took place.

The only descendant in direct line from Sheik Bilar now living, is a female, named Miriam, who resides in Kej, and is allowed a pension of some six Rupees a month by the Muscat Sultan, which is a charge on the Gwadur revenues. It was probably originally granted as charity, in consideration of the loss sustained by the Boleidee family, when the Charbar territory was seized by the Sultan of Muscat.

History of Nadir.

We have now Malik Dinar Gaitchkee established at Kej. It is a comfort to have a date at last, and we know he was ruling in Kej in the year 1739 A.D. The Gaitchkee family is reported of Rajpoot descent, and their appearance confirms the account, which is, indeed, not disputed by themselves. Probably they were connected with the Rajpoots who immigrated to Sind, and entering Mekran from thence settled in a small village named Gaitch, near Punjgoor, from which their name is derived.

The Gaitchkees had adopted the Zikree religion, which under Malik Dinar reached the height of its prevalence and influence. According to the popular belief, on the murder of Sheik Bilar, his nephew, Sheik Kasim, repaired to Nadir's Court, who agreed to re-instate him, and sent a large army under Tahi Khan to depose Malik Dinar. Kej was

taken, but on Sheik Kasim's refusing to become a vassal of Persia, was restored to Malik Dinar on those terms, and the Persian force withdrawn.

Unfortunately for the truth of the Belooch account, it appears from the Persian historical notice of the taking of Kej that it had nothing to do with the misfortunes of the Beloochees, but occurred as follows :—

Vide appended Extract No. 3.

In the year 1738 A.D., when Nadir Shah, returning from the conquest of Delhi, conceived the design of seizing Sind, he ordered Mahomed Tahi Khan to march by land to Sind with the forces that he had assembled for an expedition to Muscat, sending his artillery and heavy stores by sea. Tahi Khan complied, and on reaching Kej took its fort by force because Malik Dinar would not submit to his authority. The latter was "reduced to obedience." The Persian fleet had reached Gwadur, and probably some guns were landed there for the reduction of Kej. This affair delayed Tahi Khan until the approach of the monsoon, so he sent back his ships and wrote to Sind for orders. The reply was, that Sind was already conquered, and his force not required. He was ordered to dimiss his troops and return to his Government. Malik Dinar seems to have been left ruling. Not unlikely Tahi Khan had been propitiated in the usual manner. This was in 1739. The Beloochees would have it that it was Nadir's displeasure at the failure to re-instate Sheik Kassim which caused him to sentence Tahi Khan to mutilation, but, as is well known, that was the punishment of his subsequent rebellion, and moreover occurred four years later.

Malik Dinar, however, was not destined to remain undisturbed in his usurped dominions. Sheik Bilar had left three sons, named Noor Mahomed, Wullee Mahomed, and Shepee Khan. The two latter need not be further noticed. Noor Mahomed, sometime after his father's murder, fled to Khelat. He afterwards served under Nasir Khan when that Chief reigned at Khelat, and so pleased him by distinguished bravery, that Nasir Khan determined to restore Kej to him, and aid him to revenge his father's death. An army was accordingly assembled and marched to Kej. The Miri held out, but Malik Dinar was enticed by a stratagem to come into Nasir's camp, when he was put to death by Noor Mahomed.

Sheik Omar, eldest son of Malik Dinar, continued, however, to successfully defend the fort, and an Envoy in the person of Sheik Beg, brother to Malik Dinar, was despatched to Candahar, to petition for the interference of the Ameer Ahmed Shah. The latter sent messengers to Nasir Khan, desiring him to desist from the siege of Kej, and it remained for the time in Sheik Omar's hands. It is circumstantially narrated how, subsequently, Sheik Omar, fearing the consequences of his temerity, repaired in person to Khelat, where he was long refused admittance to Nasir Khan's presence. At length, however, an interview was granted, at which he placed himself and his dominions at Nasir Khan's feet. It was at this period that Kej Mekran first passed into the power of the Khelat Chief. It is true, Sheik Omar was suffered nominally to hold the government, but in future a Naik on the part of the Khan was to reside in the Miri of Kej, and to receive one-half the revenues of those provinces then in the hands of the Gaitchkees. The Zikree sect were also to be put down, and Mahomedanism established. Sheik Omar having agreed to fulfil these terms, Nasir Khan proceeded to Mekran with a force sufficient to quash all opposition. Virtually Nasir Khan may be held to have annexed all Kej Mekran to his dominions at this time; but it must be remarked that the Mekranees do not in general see the matter in that light, but hold that the Treaty did not deprive Sheik Omar of his supreme authority, and merely affected the revenues.

During Sheik Omar's life Mekran was the scene of constant struggles. He was at enmity not only with the Boleidees but also with the Gaitchkee Chiefs, who were dissatisfied at the compact he had made. Finally, he was murdered by some Boleidee, and his brother Sheik Lalla replaced him.

Thenceforward, until recent times, the tale is of frequent efforts on the part of the Gaitchkees to throw off the Khelat yoke; and Mekran accounts are of little use, as no doubt the principal events are on the records of Khelat. In the time of Mahomed Khan, the son of Nasir, the Gaitchkees temporarily recovered their independence, but Mehrab Khan, in the early part of his reign, re-gained the ascendancy. The last effort of the Gaitchkees was made by Sheik Kasim, father of the present Chief, who, in about 1831, slew the Khan's Naib, and threw off the yoke. An army was sent against him, and after some fighting he was forced to submit. The descendants of Malik Dinar have been

permitted to retain a nominal chiefship in Kej and other places, and half the revenues is still devoted to them. The administration of affairs of the province is said also to have rested with them up to the time of the present representative of the Khan, Fuqueer Mahomed Bezunjoo. This Chief has allied himself matrimonially with the Gaitchkee family, and by tact and determination wields undivided authority throughout the province. So long as he holds the reins, the Gaitchkees are not likely to be troublesome, but although their Chiefs have acknowledged the supreme authority of the Khan of Khelat, their present status must be galling to them at times. It would perhaps be better for themselves, as well as a safer arrangement, were their Chiefs provided for in a manner different from the method now followed, of admitting them to a share of the revenues.

The foregoing sketch applies in general to all the three provinces of Kej, Toomp, and Punjgoor. Of the dependencies of Kej, Ormard has passed to the Khan, Kolwa is attached to Upper Beloochistan, and Gwadur is in the possession of the Sultan of Muscat. This seems an appropriate place to inquire how Gwadur came into the possession of the Sultan.

The following account is from local sources:—

III. Gwadur

was formerly a dependency of the Kej province, and during the time of the Bolcidees, was frequently the residence of the Ameer. In the time of the Gaitchkees and subsequently to their subjugation by Nasir Khan, Gwadur was acquired by Sultan bin Ahmed, grandfather of the present Sultan of Muscat, in the following manner. That Prince, being suspected of treasonable designs, was banished from his father's Court, and made a journey to Khelat in hopes of inducing Nasir Khan to further his ambitious schemes. He was so far successful as to obtain Gwadur, either in gift or on loan. For it is a disputed point between Belooch and Arab, whether it was intended as a free and actual present, or merely as temporary accommodation. Whichever way it was, the Gaitchkee share of the revenues of Gwadur seems to have been ignored. Their account of the matter is, that Nasir Khan assigned Gwadur to Sultan bin Ahmed, as a residence, for so long as he should require it, making over to him his own half of the Gwadur revenue, a common way amongst Oriental Princes of providing for a noble guest. This is the

commonly accepted account at Gwadur; according to it, the grant was made to Ahmed during the life-time of his father, and if that be true, it might be an important point, if it was at all necessary to investigate the rights of the case. On the death of his father Syud Ahmed, then, it is said, that Sultan setting out from Gwadur succeeded in establishing his authority at Muscat. Thence he despatched a Governor to hold Gwadur for him, and retained undisturbed possession of it during his life-time.

Soon after Sultan bin Ahmed's death, his son Saeed, being still young, the Beloochees assembled under Meer Dostun, the Boleidee Chief of Sirbaz, and re-possessed themselves of Gwadur, which remained a few years in their possession. A force sent from Muscat re-gained it, since when Gwadur has been uninterruptedly in the possession of the Muscat State. Its right has, however, been by no means unchallenged. Some thirty or forty years since Sheik Kasim Gaitchkee, of Kej, advanced against Gwadur and succeeded in obtaining payment of a share of revenue during two years. Again, some fifteen years ago, Faqueer Mahomed, Naib of Kej, besieged the place with 3,000 men. On receiving a sum of money, he retired. Another expedition was lately organized, but abandoned. The Arab Governors of Gwadur have the title of Wali. Their authority over the Beloochees is but slight, and they have to put up with a good deal of insolence. A former Wali, who endeavoured to assert his authority over some people of the Rind tribe, was murdered by a party of them. Some warfare ensued between the Muscat Government and the Rinds, and the latter, on one occasion appeared before Gwadur in considerable force.

IV. "*Ruhana Mekran*"

comprises the provinces to the westward of Kej. The epithet indicates that this part of Mekran is watered by streams. It might also be described as "Persian Mekran," as, with the exception of a portion of sea coast about Charbar, the whole of this division of Mekran is now paying tribute to Persia. The chief provinces, when this was part of independent Mekran, were Bunpoor, Dizak, Sirbaz, Gaib, and Kussurkund. The information at hand respecting them is too slight to admit of more than a brief allusion to each separately.

Bunpoor.

Bunpoor is the western province. Originally a province of what has been called Federal Mekran, it probably early assumed a separate independence, and

took no part in the Boleidee and Gaitchkee struggles. The predatory incursions of its rulers into Persian territory resulted in its forcible annexation to that kingdom. It is now governed by a Persian, named Ibrahim Khan, whose authority also extends over all "Persian Mekran."

Dizak.

Dizak.—A descendant of the old rulers is still Chief in this province, but governs entirely as a creature of Persia. A Persian army captured the fort of Dizak in 1734, but it was not permanently held then. In recent times Persia has asserted its authority over this district. One Chief held out against Persian forces in the fort of Zerokhshan within the last two years, but was eventually slain, and the fort captured.

Vide appended Extract No. 1.

Gaih.

Gaih was for years the scene of Boleidee and Gaitchkee struggles. The former finally held their own, but within the last fifteen years or so the Chiefs of Gaih have also become tributary to Persia. The policy of the latter Government in these provinces seems to be to have the hereditary Chiefs in power wherever consistent with its own interests. The present Chief, Meer Abdullah, is not the hereditary Chief, but acquired a title to Gaih by marriage with the Boleidee heiress, and was confirmed by the Persian Government, which thus secured a Naib well affected to its interests; as were it not for fear of Persia there would be many to challenge his title. Meer Abdullah is himself a Gaitchkee by descent, but his mother was Boleidee.

Baho and Dushtyaree are districts of Gaih; their subordinate Chiefs are, at present, the Ludgals, Mahomed Ali and Deen Mahomed, who are entirely under Meer Abdullah's power, but are very dissatisfied with existing arrangements.

Sirbaz and Kussurkund.

Sirbaz and *Kussurkund*, after having been alternately possessed by Boleidee and Gaitchkee, are now united under a Boleidee Governor, Sheik Abdullah, who pays unwilling tribute to Persia.

Thus by reason mainly of their internal dissensions, and predatory propensities, the Beloochees of Western Mekran have become subject to a yoke they hate. It is different with the people of Eastern Mekran which owns the sway of the Khan of Khelat. He, like themselves, bears the name of Belooch, and his authority is cheerfully acquiesced

in, and his name mentioned with respect. With a little wisdom or patriotism in their Chiefs, the people of the Western Provinces might have shared the same fortune, and all Beloochistan united under the Khan would have been safe from Persian aggression.

Some passages from the Persian history of Nadir Shah, containing allusion to matters noticed in the foregoing sketch, are appended; as is also a Table showing the genealogy of the principal branch of the Gaitchkee family.

Gwadur, 22nd May 1865.

Extracts, translated from the Life of Nadir Shah.

EXTRACT No. 1.

The Governors of Kerman and Seistan had been ordered to proceed with a force, and chastise the Balojis of Dizak. Despatches from the said Governors conveyed intelligence to the illustrious Court, that, under the auspices of the Imperial prosperity, they had humbled and crushed the rebels in that district, and after slaying a number of them had taken the Fort of Dizak.

A.D. 1734.

EXTRACT No. 2.

Operations in Beloochistan, 1736 A.D.

It has been previously stated, that Pir Mahomed Khan and Eselmas Khan, had been sent from Ispahan, to command in Beloochistan, and were ordered to proceed with a fully equipped force and artillery, to chastise the rioters of Kharan. On 9th Zu'l Hije, when Nadir was encamped on the plains of Candahar, Mahomed Ali Beg Saewhloo, Naib of Ishac and Chief of the Agas, was despatched with a force to punish the Shir Khan tribe of Beloochees, and those of Shorabec (in Kharan) who were committing outrages. The Belooches, aware of the approach of this force, assembled and gave battle, when they were within two parasangs of Shorabec; seven hundred Beloochees were slain, and many of their mules and camels taken.

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Mahomed Ali was next directed to join the Beloochistan Commander at Jalk Kharan, and on the conclusion of their operations to return to Shorabec, and reduce all the forts in its vicinity.

On the 3rd Mohurrum 1150, Ameer Mohubbut Khan and Ameer Iltryaz, the sons of Abdullah Khan, whose attachment to this Government, and the favours he had received from it, have been already noticed, arrived at Court and received presents of horses and swords, and other marks of favour. Mohubbut Khan was confirmed afresh in the Government of Beloochistan.

23rd April 1736.

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Although the Persian Generals (Pir Mahomed and Eselmas Khan) had done good service in taking the Fort of Jalk, renowned for the strength of its defences, yet unfortunately Pir Mahomed, who was chief Sirdar, being a man of little wisdom, conceited, and quarrelsome, separated from Eselmas Khan on account of a trifling squabble, and neglecting to advance on Kharan, by leading his troops into desert and mountainous districts, exposed them to dreadful perils. Many perished from famine and thirst, and the cattle and baggage were abandoned.

EXTRACT No. 3.

Orders were sent to Mahomed Tahi Khan Beylubegi of Fars, to bring the forces of Fars, Kerman, Kohgilooyah, and the seaports which were in readiness for the Muscat expedition, to Sind and Salta, proceeding himself by the land route, and sending his artillery and superfluous troops by sea in Government vessels.

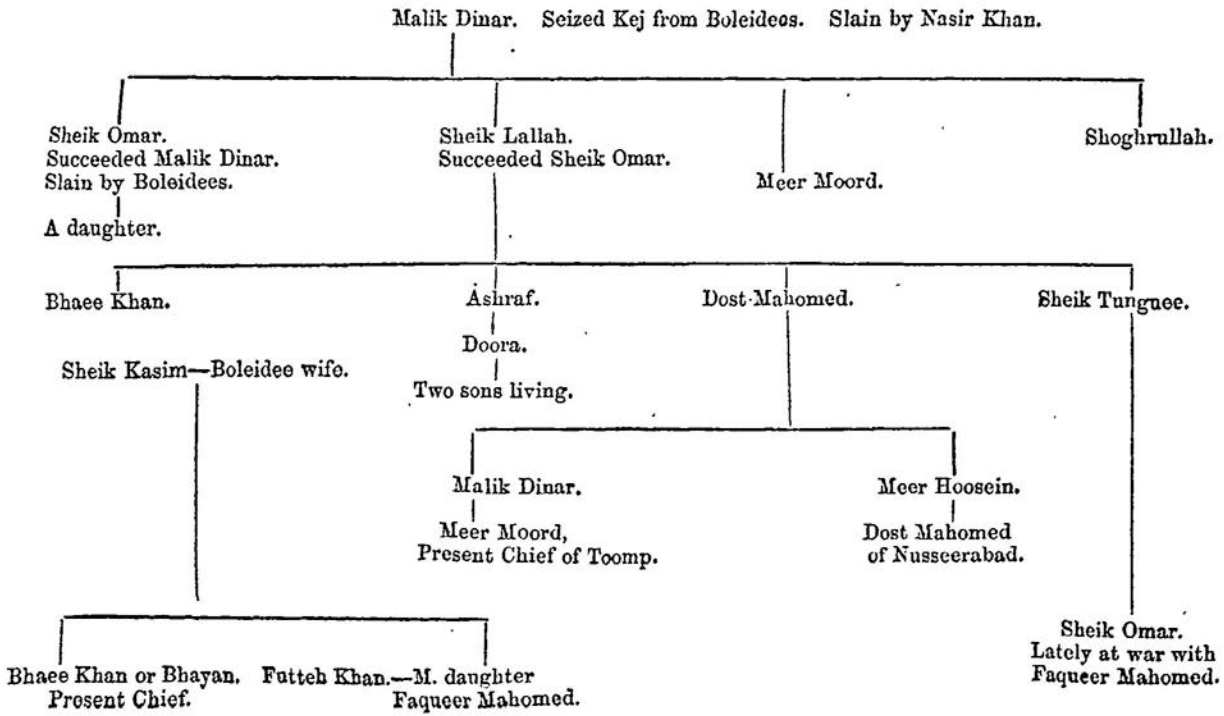
A.D. 1738.

There [Larkana] a despatch was received from Mahomed Tahi Khan Beylubegi of Fars, stating that unfavourable circumstances having prevented his advancing to Sind, he had entered Kej and Mekran. There, Malik Dinar, Governor of that district, having chosen to withhold his fort, Tahi Khan sent a force against it, and had vanquished and reduced him to obedience. On account of the approaching close of the season for sea-voyages, he had taken the precaution of sending the ships back to Bunder Abbassee, and had himself remained in Kej and Mekran.

A.D. 1739.

An order was issued to the effect, that as the Sind undertaking had been successfully accomplished, he should dismiss his forces and hasten to join Nadir.

Descendants of Gaitchkee Chief.



REPORT ON A VISIT TO KEJ; AND ROUTE THROUGH MEKRAN FROM GWADUR TO KURRACHEE.

LEAVING Gwadur on 10th September 1865, I marched for Kej by the shortest route, which, for several miles, leads nearly due north. Another road, which, though longer, is also frequently taken by persons travelling from Gwadur to Kej, leads in a more easterly direction, and circling round by Kupper and Kolanch joins the first at the Talar Pass. In addition to the Belooch sepoys forming my escort, I was attended by one Moola Doora, an Agent to Mir Fuqueer Mahomed, Naib of Kej, whom the latter had appointed at my suggestion to accompany me. I had considered it advisable that I should enter Kej conducted by a person known to be in the Naib's service and confidence. I found that Moola Doora had instructions not only to conduct me to Kej, but further to attend me to any part of Beloochistan I should visit. Being an intelligent person and well acquainted with the country and inhabitants, I subsequently benefitted much by his advice and assistance. My baggage was carried by camels—the only description of carriage obtainable—or indeed which could be used in Mekran.

Gwadur to "Dusht."

For the first three stages from Gwadur to the "Dusht" District, the road lies through a barren, almost uninhabited tract. About eight miles from Gwadur a little oasis is passed named Nigor, where are to be seen a few date trees and patches of cultivated land. Totally dependent on the seasons, when rain is plentiful the owners of the fields sow and reap, but in dry years the fields are neglected. After a ride of 8½ hours, having at 12 miles north of Gwadur passed through the Nigor hills, early on the morning of the 11th I arrived at the spot fixed on for the first halt. The place, named Tonk, is a little valley containing some fertile soil and a small grove of date trees. An artificial bund, 150 yards long, has been constructed, and in good seasons a little grain is grown. Two miles from the halting ground there is also a field of Cotton. The supply of water from a well in an adjacent nullah was scanty and bad. Two or three huts were seen belonging to goat-herds who live in miserable poverty. There is a sufficiency of camels' food and a little fodder for horses. The heat was great, 110° in a tent, at mid-day. The lofty Daram hills bore S. S. E. from my Camp, distant about five miles, and to the north another range was seen. From Tonk, which I left on the evening of the

11th, the road takes a more easterly direction, between the two ranges of hills. Seven hours of an easy level path brought me to a wooded spot called Beylar, where I made my second halt. Water is procurable here from a well, and forage for camels and horses, but there being no inhabitants no other supplies are obtainable. Being provided with a sextant and artificial horizon, I here took the sun's altitude at noon, and subsequently continued to take observations to determine the altitude at most of the places where I halted. For the longitude I trusted to reckoning, when possible, consulting a compass for direction of march. At 4-30 P.M. on the 12th, I marched from Beylar. Six miles march in a north-easterly direction brought us to a pass through the mountains, known as Talar Pass. South of this pass the road to Kolanch branches off in a southerly direction. By the latter route Gwadur may be reached in two marches, and though it is perhaps somewhat more circuitous than the route I pursued, passes through a more interesting country. The Talar Pass is narrow and difficult, but not more than half a mile in length. It is a rocky ravine, the bed of which is strewn with large boulders and contained a considerable quantity of rain water. During heavy rains this pass is impracticable and, at all times, might be held by a few men against numbers. The hills on either side—unlike those along the sea coast—are rocky, at the pass the strata are set up semivertically, ending in sharp peaks, all of like inclination, which gives the scenery a singular appearance. The name of Talar occurring frequently in Mekran I particularly inquired into its meaning. It seems to be in general applied to rocky hills distinguished from the clayey or sandy ones, but occasionally to be given to large boulders or rocks. The name is not applied by the inhabitants of the neighbourhood to the mountain range generally, and here I will observe, with regard to mountains and rivers in Mekran, that general names are not employed by the natives. Hills ni the vicinity of a well known place assume its name, and the same with rivers. In case of rivers this custom is likely to lead to mistakes when the course of a stream is not followed up.

The words "Jebel" and "Koh" are both in use to indicate mountains. A river, or its bed, is termed "Khor."

Dusht.

Having rested a few hours at the north side of Talar Pass, I proceeded en route for Kohuk at 1 A.M. on the 13th. From the pass, the road to Kohuk

turns N. W. and leads over some low hills. The distance is twelve miles and within four miles of Kohuk is a date grove, in which are a few huts, a spot which bears the name of Geki. At this point there is a marked alteration in the character of the soil and country, and the pleasant green of the underwood and occasional patches of cultivated land is refreshing to the eye, after the barren ugly tract previously traversed. The district now entered, known as the Dusht, a valley or plateau of considerable extent, contains much rich and fertile land, and consequently is comparatively of importance. Its name usually signifying, as it does, "a *desert* plain," has led to this tract being described as a dry barren one, when, in point of fact, it is one of the most flourishing portions of Mekran. The river or Khor, named the "Dusht," flows through the valley in a south-westerly direction, fertilizing the land, and enriching it with a quantity of alluvium which it brings down at certain seasons, and reaches the sea near Jewni to the westward of Ras Pishkan. It must not, however, be supposed that the "Khor Dusht" is at all times a continuous stream from source to mouth; unfortunately, it is only after rains that it deserves the name of river at this point in its course. At other times, though starting and continuing for a considerable distance in the character of a flowing stream, the dry sandy soil of Mekran soon checks its course and so far absorbs its waters that the deeper pools alone remain. When heavy rains occur higher up the country, this river, every where receiving contributions of water from the hills on either side, rapidly rises. At such times an immense body of water suddenly appears in the Dusht, and the banks of the Khor are inundated for a considerable distance. So sudden, sometimes, is the irruption, that the inhabitants are unaware of its approach until the flood is on them, and in this manner many lives are said to be lost. As the land thus flooded dries up, the inhabitants lose no time in taking advantage of its fertile condition to throw in seed, which seldom fails to prosper. Several villages are situated along the course of the Khor. Further west in the same plateau is situated the fertile flourishing tract named Baho, which is watered by a second Khor flowing from a more westerly source. The light spongy soil of Dusht is well adapted to produce Cotton, and this article is grown in considerable quantities and, I believe, of fair quality; several kinds of grain are also produced. The uncertainty regarding irrigation is, however, necessarily discouraging to extended operations.

Kohuk, where I halted, on the 13th, is a village of about 80 huts situated on the north bank of the Khor. A solitary little rocky hillock, the site of a dismantled fort, gives this place its name. The inhabitants engage mostly in agriculture, and though not rich, appear in comfortable circumstances. Supplies may be had in abundance and at moderate rates. I was met on arrival at Kohuk by Kowda Nubbi Bux, the Head-man, with whom I had been for a long time well acquainted. The prefix to his name, "Kowda," is a contraction, I apprehend, of "Kod-khoda," signifying "Master of a house," or "Magistrate," or perhaps "Squire" is the nearest equivalent in English. The principal families in Dusht bear this distinctive name which, though originally indicating a "rank" or position, has, by being extended to followers and retainers, come to have a wider application, and the Kowdaees may now be included in the list of "tribes," or more properly "clans" of Mekran. There are other families to which the same remark applies, such as "Moularee," "Raisee." Nubbi Bux was for several years at feud with Fuqueer Mahomed and Futteh Khan Gitchki, and on one occasion, went to Kurrachee to petition the Commissioner in Sind on the subject. For some time he held out against the Naib in the little fort of Kohuk, and several lives were lost on both sides. Subsequently, Nubbi Bux took refuge in Gwadur. I brought about an interview between him and Fuqueer Mahomed when the latter was on a visit to me at Gwadur, when the possibility of a settlement was discussed. The Naib insisted on the dismantling of the fort of Kohuk as an indispensible term, and to this Nubbi Bux having reluctantly consented, he obtained in other respects good terms. Fuqueer Mahomed performed his promises faithfully, and has since received Nubbi Bux into favour and confidence. Though the latter is now living in comparative comfort and affluence in his own village, I doubt if he is reconciled by this consideration to the loss of importance entailed by the dismantling of his little fort. The central part of Dusht from Kohuk for some distance along the river is immediately under Nubbi Bux, who is held responsible for the Khan's dues by the Naib. The inhabitants hereabouts are divided into Dushtees and Kowdaees. I passed the day at Kohuk, receiving every attention and courtesy. The heat was great (100° in the shade) and towards evening a south-westerly breeze brought thick clouds of fine blinding dust up the valley.

Kohuk.

Next morning (the 14th) I set out for Kuntadar, a fort and village also situated on the Khor, and about 12 miles N. E. of Kohuk. The name is derived from a Belooch word signifying "trunk of a palm tree." The road from Kohuk lies along the left bank of the Khor through jungle and occasional Cotton fields and other cultivation. On a bend of the Khor stands the mud fort of Kuntadar on an eminence, and round its base are clustered some 200 huts. The headman of the village, Kowda Dad Kerim, with whom I was acquainted, had gone on a visit to India, but his brother named Suleiman, received myself and party with courtesy, and the few supplies needful were readily procured.

Kuntadar.

From Kuntadar to Kej is one rather long stage. I estimated the distance at 20 miles. Wishing to arrive at Kalatok early on the 15th I left Kuntadar at 7 P.M. on the 14th. The road for six miles led in a north-easterly direction to a range of hills, which are crossed by an easy ascent. The Khor flows through the hills further west, and is not seen till near Kej.

These hills form the northern boundary of the Dusht, and separate it from the valley in which Kej is situated. The latter valley deserves attention, being a remarkable feature in the geography of Mekran. From the eastern extremity of the province of Kolwah two parallel mountain ranges extend unbroken to the borders of the Persian provinces, a distance of at least 250 miles. The direction of these two chains is, in general, from E. N. E. to W. S. W., and as far as my own observation enables me to judge they preserve a distance between them of from 12 to 20 miles. In the strut-like valley thus formed is situated the greater proportion of the important places of Mekran, and it probably contains more fertile land than all the rest of the eastern division. The eastern portion of this valley for 60 miles is occupied by the province of Kolwah. Further west a river enters the valley from the north, and turning westward flows through the centre; on it are situated Sami and Kej. Westward of Kej in the same valley are Nusseerabad, Toomp, Mund, and Pisung, all considerable settlements. As far west as Toomp, the whole of this tract is subject to the Khan of Kelat. The next large settlement west of that is Mund, which is a sort of debatable land, being inhabited by the lawless thieving Rinds, who disown alike the authority of the

The Dummok or Valley.

Khan and of Persia, neither will they acknowledge the authority of any one Chief of their own.

The next place, Pisung, is at the present day subject to the authority of the Persian Deputy. The mountain chains on either side of this valley are at some points very lofty and are not altogether uninhabited. Amongst their recesses are fertile spots where dates, apples, and other fruits are said to thrive. These spots are inhabited by wild Belooch tribes, who likewise own considerable flocks of goats and sheep. A coarse woollen fabric is manufactured by these hill people, and fetches a good price in the plains.

The valley just described, as well as all similar valleys lying between ranges of hills, is called a "Dummok" in Beloochee. This is worth noticing, as in some maps one sees a hill called Koh Dummok, evidently from a misapprehension.

The next place at which I halted being one of the forts of the Kej group, before proceeding with the account of my route it will be necessary to attempt a general description of Kej.

Kej.

From the fact of Kej being generally mentioned as the capital or chief town of Mekran, one not unnaturally comes to think of it as an extensive city, possessing its markets, streets, and buildings. A visit quickly dispels any such notion, as there is nothing to be found at Kej which deserves more than the name of village. It is difficult to fix on the proper term under which to speak of Kej, which name is employed to indicate a "settlement," in which are situated a number of forts and villages; and here, be it remarked, this is the system universally adopted throughout Mekran. All the principal places usually considered as towns, such as Punjgoor, Toomp, Kolanch, Baho, Dizak, &c., being in point of fact "Abadees" or "settlements," extending for several miles, and including, under the general name, villages and forts each bearing its distinctive appellation.

The "Abadee" Kej then is situated in the centre of the valley, between two lofty ranges of hills, here about 12 miles apart. The fertile and inhabited portion which constitutes the "Abadee" extends east and west about a dozen miles on either side of the river, here named "Kej" Khor, but lower down met with under the name of Dusht Khor. The whole breadth of Kej is not more than three miles, the rest of the valley between it and the hills being barren and stony land. The fine groves of date trees which line the banks of the Khor form the most prominent

feature in the scenery. Karezes or artificial watercourses intersect the land in all directions, flowing through the groves and irrigating the fields which skirt them. Several forts and villages are situated along the banks of the Khor, but being concealed amongst the date trees are not seen until close by, with the exception of the Miri, or palace, which has a good elevation. The principal places of Kej are the "Miri," Killa-i-Now, Gushtung, Turbut, Abser, Kahowe-i-Kalat, Sengi-Kalat, and Kalatok, each of which consists of a mud fort of greater or less pretension, surrounded by a cluster of huts. The Miri is the most remarkable and strongest of the Kej forts; in former times the residence of the local Chiefs of Kej; it is now appropriated to the Naib, or Deputy, who resides here on the part of the Khan of Kelat. It is situated north of the Khor, nearly in the centre of Kej, and built on a hill which commands the surrounding country. Constructed of mud intermixed with round stones, it would be incapable of defence against artillery, but in Mekran, where cannon are rarely seen, the place is considered next to impregnable. On inquiring the date of its foundation, I was informed that it was built by Bahman, or Ardeshir, son of Isfandyar, of the first dynasty of Persian monarchs, who, legend says, met his death in Kej. Mekran I was told was a province of the Persian empire, and the kings, on the occasion of a tour through their provinces, were wont to cause some work to be constructed as a memento of their visit. Thus in Kej two Karezes were shown me, which are named "Kaoosee" and "Kaikhosrooee," the construction of which popular account ascribes to the ancient monarchs whose names they bear. Another piece of information afforded me is, curious enough, viz: that Mekran was the penal settlement for Persian convicts, from whom sprang the original Mekrani race. As I have been frequently told the name "Mekran" is from "Makar," deceit, and means "country of rogues," perhaps the two statements may be matched together.

Miri.

Two old guns, one a 32 pounder, both dismounted and useless, were lying in the "Miri." At the foot of the hill is a village of some 150 wretched-looking habitations. Two Hindoos reside in it; the other places in Kej will be further mentioned en route.

Mir Fuqueer Mahomed Bezunjoo is at present the Naib of Kej, and exercises in the name of the Khan chief authority throughout the Province. The

Inhabitants.

powers, however, exercised by the local Chiefs in their own immediate districts are nearly absolute, and uncontrolled by the Naib or other person. Fuqueer Mahomed's native place is Nal, and his authority in Kej is entirely derived from the Khan; he has, however, strengthened himself by alliances with the local Chiefs.

The Chief local family is the Gitchki, who, of Hindoo descent, once acquired supreme power throughout most of Mekran and are still in a position of much importance. The family is divided into two branches; the Malikzai resident in Kej, and Esazai in Punjgoor. The present head of the Kej Gitchkis is Mir Bhayan, who resides at Killa-i-Now. The Gitchkis hold a position in Kej quite distinct from and superior to that of any other local family.

The Raisees and Moolaees are families of some distinction. The numbers are very limited, and they must not be considered as tribes.

The rest of the population may be divided into Sangooras, Durzadus, Lorees, Loondees, and Kutwarees. It is difficult to form an estimate of the number, but probably in all Kej there are about 10,000 souls.

Produce of Kej.

With regard to produce, the strong point of Kej is in dates, which are grown in large quantities and of good quality. This article, besides supplying the wants of the inhabitants, is despatched in large quantities to the neighbouring places and the coast. In addition rice, barley, wheat, Indian corn, cotton, and tobacco are all produced in greater or less quantity. Rice is most attended to; several descriptions of fruit are procurable in season, amongst the number mangoes, oranges, citrons, and limes.

Trade.

The commerce of Kej is entirely in the hands of a few Hindoo merchants, who reside in the different villages. They export dates and rice in exchange for grain, wool, salt-fish, clothing, and other necessaries of life. The Hindoos seem to be in general well-treated. They informed me that they had been more comfortable since the establishment of the British Telegraph stations in Mekran. Such simple trades as the requirements of the inhabitants demand are practised by the Lori or gipsy tribe.

The amount of revenue realized in the Kej province on account of the Government is very much less than would be supposed from a consideration of the resources of the country. The soil is held on the

usual oriental tenure, but the enforcement of the payment of the land tax, the property of the Government, is invariably regarded by the occupants as the height of tyranny and oppression. Whenever a landholder is powerful enough, he is always prepared to resist the exaction, and the usual plan of necessity resorted to is to assemble a force and seize by violence what ordinary means are powerless to obtain. In most of the districts the local hereditary Chief is the person to whom the Naib applies for the dues. The former exacts from his followers in kind and usually pays the Naib in gold after appropriating his own share. When a Gitchki Chief is in power only half the revenue goes to the Khan, as by treaty it was in former times agreed that the Gitchkis should continue to receive one-half of the entire revenues of Mekran. There are throughout the country so many of these Chiefs and other persons who, holding land, claim exemption from taxation for one reason or another, that the sum finally despatched to Kelat is probably not over 5,000 Ashraps.

Kalatok.

On the morning of the 15th September the luxuriant date groves of Kej appeared in sight, and having followed a road winding amongst the trees for a couple of miles, I arrived at Kalatok, a fort and village the residence of Mir Futteh Khan Gitchki. This Chief is a younger brother of the head of the family Mir Bhayan, and married to a daughter of Fuqueer Mahomed, the Naib. The latter was absent, having gone on a visit to Kelat, and Futteh Khan was deputed by him to represent him during his absence. For this reason I chose Kalatok as my first halting-place in Kej. Soon after my arrival Futteh Khan visited me, attended by about twenty of the principal inhabitants. The visits in Mekran are most important affairs, and the elaborate greetings which pass are quite a study. The following forms are adhered to whenever a stranger of consideration arrives at a Mekran village. On observing the strangers halt near the village, usually charpoys are brought for their accommodation, and disposed under a tree. The Headman meantime assembles as many as possible of his friends and neighbours, and the whole in a body, generally of about twenty persons, advance to the spot where the chief stranger (also with all his followers) is seated. After "Salam Alaikum" and shaking hands, both parties become seated opposite each other, the Chiefs in the centre. A regular file-firing of inquiries then ensues, it being necessary for each person to inquire after the health of

every individual of the opposite party. That over, the Chief resident turns to each person of his party separately, and asks if he shall demand the news. All are addressed in succession, "Salam," and say "Jee," whereupon the Chief inquires "what news?" The reply is a formula and depends on the relative rank of the parties. If equal, "Salamati" (welfare) or some such reply is made. The principal stranger then turns in like manner and asks each of his party if he shall ask news in his turn. On the same form being gone through again, the file-firing of individual inquiries is resumed, and when those are terminated, and not till then, ordinary conversation commences. These greetings are gone through with the solemnity of a religious observance, and any interruption of them is held to be evidence of the worst breeding.

Futteh Khan is middle-aged, and dresses in a more handsome style than usual in Mekran. He is said to be able and respected by his own retainers. I received every attention and civility from him during my stay at his village. Presents of meat, dates, fruit, &c., were being constantly brought for myself and my party during the day. Kalatok is an insignificant mud fort with bastions, round the base of which are about 100 houses. It is said that in the cold season about 1,500 souls assemble here. In the evening I returned Futteh Khan's visit, and was received at the gate of the fort. I was handed some Persian letters to peruse, from which it appeared that the country to the north was somewhat unsettled. On the 16th taking leave of Futteh Khan, I moved eastwards about 7 miles to Killa-i-Now, the residence of Mir Bhayan Gitchki by whom I was well received, and my followers hospitably entertained. The fort is small and mean-looking, round it are clustered some 200 huts. Mir Bhayan is much beloved in Kej, being of a kind and liberal disposition, and in appearance and manners he is most gentlemanly and pleasing. This day I paid the "Miri" a visit. It is situated on the opposite side of the Khor about two miles due north of Killa-i-Now. A young son of Fuqueer Mahomed was residing there; I was freely shown over the fort.

Killa-i-Now.

On the 17th of September I proceeded to Turbut, two miles further east. On the way I visited the fort and village of Gushtung, which is within half a mile of Killa-i-Now. This fort is larger than those I previously visited,

Gushtung.

and the village contains about 1,000 inhabitants. Mir Bahram, an Esazai Gitchki (the Punjgoor branch of the family), holds the fort. I was met by him at the entrance and conducted over it. In the maps of Mekran which I have seen, this place is shown as a distinct town, forty miles distant from Kej.

Turbut.

Turbut is undoubtedly the most populous and stirring of the Kej villages, and at this season contains about 1,500 inhabitants. Two Hindoos carry on trade and reside here. The principal personage present during my stay was Rais Moosa, a very respectable old gentleman, with whom I had a previous acquaintance. He is at present in charge of the fort, but merely as a temporary measure. It was formerly in the hands of Sheh Omar Gitchki, who has lately been turned out by Fuqueer Mahomed, not without a struggle which cost several lives. I believe it is not yet decided to whom it is in future to be entrusted. South-east two miles is a hill called Koh Moorad, the shrine of the Zikree sect. This sect is tolerably numerous here, but more so further east about Sami and Kolwah. From Turbut I purposed proceeding to Punjgoor, and to decide as to my further route by the letters and information I expected to receive by the time I reached that place. Having now seen all the principal parts of Kej I was anxious to proceed at once, but was detained some days for want of camels, which at length were procured for me by the intervention of Futteh Khan on the 21st September. There are two routes from Kej to Punjgoor, the most direct but most difficult being by Bolridi, the other by Sami. Moola Doora having insisted on continuing to attend me, I in accordance with his advice determined on taking the latter route.

On the evening of the 21st September, all being ready, I prepared to start for Sami. A number of persons had assembled to see us off. Whilst sitting on a chair carelessly watching the kit packed, I suddenly received a violent blow in the waist from behind. Ignorant of the nature of the attack, and having nothing in my hand wherewith to defend myself, I sprang forward a few paces to avoid a second blow. On turning round I perceived an individual making at me, brandishing a long dagger. The sepoys of my escort and several of the bystanders quickly interposed with drawn swords and the man was secured without difficulty, and his hands bound. Those present hastened to assure me that my assailant was a stranger in the country, and not a Belooch.

They proposed beheading him on the spot, which of course I forbade. I then questioned the man himself as to his motive in assaulting me, but he took not the slightest notice of my questions, and looking straight over my head kept moving his lips, apparently in prayer. I at once perceived from his manner that it was a case of fanaticism. Why the first blow was not struck with the dagger I cannot understand, but having escaped uninjured I thought best to affect to treat the affair as no more than an insult. On inquiry I learnt that this man was a native of Kabul, who had arrived lately with some other Afghans at Kej, I believe on their return from Mecca. I handed the prisoner over to the Kotwal of Turbut, with instructions to deliver him to Futteh Khan. To the latter I sent a request that he would hold the Afghan a prisoner until the Naib's return, when I would send instructions as to his disposal. Seeing no occasion to delay my departure further, I proceeded en route for Sami at 7 P.M.; the blow I had received was sufficiently violent to cause me some inconvenience during this night's ride.

Sami.

Sami is situated in the same valley with Kej, and is about 20 miles further east on the same river. At four miles from Sami passed the fort and village of Shahrak, where there are some 50 houses. The fort is held by a member of the Esazai Gitchki family. Sami, where I halted on the 22nd September, is a considerable place, the population, consisting of Sami and Kullugi Belooch, Kowdaees, and Durzadais, amounts to 2000. It possesses a fine grove of date trees, and paddy and jowari fields of considerable extent. In addition to the water of the Khor, an unfailing supply of excellent water is conducted by artificial water-courses from the adjacent hills. Sami, though formerly a town of the Kej province, is not so now, having in recent times been transferred to Punjgoor. It is now immediately under Mir Esa Naib and Gitchki Sirdar of Punjgoor, and the fort is held for him by his nephew Mir Kumalan; the latter did the honours and showed me much civility; he is something of a Persian scholar and seemed highly pleased to have some one to listen to his quotations from well known authors—he informed me that he had composed in Persian verse a History of Mekran from the time of "Hazret Suleiman," which he promised to send me, and which I suspect may contain some rather wonderful revelations. One statement he made arrested my attention, viz: that nearly up to the time of Nasir Khan, a yearly tribute had been paid

to Persia by the rulers of Kej, whether Maliks or Bolridis; he also said that Kej in ancient times bore the name of Gunjava.

During the past year Azad Khan of Kharan made an attempt to plunder Sami, but was prevented by the promptness of Fuqueer Mahomed in assembling a force to oppose him.

On the morning of 23rd September I moved 12 miles further east, still following up the course of the Khor. The valley here is productive, and fields of rice and wheat are to be seen, wild pig are numerous and troublesome, little artificial brooks irrigate the land in several directions, population is spare, but here and there huts of cultivators may be seen, and occasionally "Tomuns" or temporary encampments of wandering pastoral Belooch (here termed "Halk") are met with. Passing the hot part of the day under the shade of a clump of trees I continued my route in the afternoon, and at sunset halted in the vicinity of a "Halk," six miles further east. In this part of the valley, the road leads along the course of the Khor and water is every where procurable, and as there are no villages the traveller halts just as suits his convenience irrespective of particular localities. In this neighbourhood the inhabitants are said to be mostly "Zikris;" heaps of stones piled together which are often met with are said to be so placed from religious motives by votaries of that sect.

Next day, the 24th September, 8 miles further east or 26 miles east of Sami, I struck off from the Kolwa road which continues straight along the valley, and took the road to Punjgoor which here turns north-easterly. Ten miles of this course carried us by a winding but easy pass through the hills to the north, and we emerged on an extensive plain known as Balgetter, halting for repose by a small fountain south of this plain. On 25th I proceeded northerly across the Balgetter plain.

Balgetter.

a distance of 11 miles. This plain is not altogether devoid of cultivation and inhabitants, but it presents altogether any thing but a fertile aspect. Near our halting place, which was by a fountain of good water, was a jowari field. A few natives who took care of it immediately fled to the hills on approach of my party, taking us for a marauding party; they afterwards returned and I procured sufficient forage for a few horses. A messenger had arrived the night before from Punjgoor sent by Mir Boher Gitchki, who, in Mir Esa's absence, is in authority there, directing all flocks to be at once driven off to the hills, as Pursund

Khan had collected some 2,000 hill Belooch, and was advancing on a "Chupao" into the Punjgoor districts. Supposing the information I now received to be true I should exactly cross Pursund Khan's route by advancing on Punjgoor. As the state of affairs at Punjgoor itself was said to be unsatisfactory, a feud existing between the two powerful families there, I concluded that a visit would be under the circumstances ill-timed, and that I should be without sufficient motive running the risk of detention, and perhaps ill-treatment; I therefore abandoned my intention of at present visiting Punjgoor, and resolved on pursuing the Kolwa route. I made the latitude of this halting place 26° 18′ and that was the most northerly point I reached. Punjgoor is three marches further north, and I should judge from the statements made by the natives, about fifty miles distant from this spot; between is a tract named Dusht, on which stands the fort of Shahbaz.

From Balgetter striking a south-easterly course I arrived, at evening on 25th September, at the river, here known as Kill Khor, the same which lower down is called "Kej Khor" and "Dusht Khor." Here I for the first time beheld it in the form of a fine clear flowing stream which, up to this point in its course, it never fails to be. The source I am informed is amongst hills not far east of Punjgoor; its course is here southerly through the hills. On the morning of the 26th September I encamped on its banks 2 miles lower down. Thence having repassed the range of hills, a march of 12 miles brought me to a small fort and village of Puk in the district of Kolwah, which here commences and extends about 60 miles east to Mushk; no person of importance resides at Puk.

Kolwah.

The district of Kolwah is the most fertile of Mekran, and is remarkable for the excellence of its barley and other grains, which are grown in comparatively large quantities. It possesses no stream, and the land is dependent for irrigation chiefly on the supply of rain, for the retention of which dams are constructed. Oxen are numerous, and flocks of sheep and goats are every where met with, the former the fat tailed description, and very fine.

The principal tribes or families now inhabiting Kolwa are Mirwani, Kowdaee, Nowsherwani, Ormerani (a branch of the Bezunjoo). In former times a large division of the Rind tribe resided in it, but a feud occurred between them and the Kowdaees, which ended in the total expulsion of the Rinds; there are several forts and villages in the pro-

vince. On the north side of the valley are *Rudkhana*, the residence of Mir Gungozai, the chief of the Kolwah Kowdaecs, who consider themselves of more importance than the Kowdees of Dusht; they have intermarried extensively with the Mirwanis—*Maday*, the residence of Dost Mahomed Kowdaee,—*Hur*, held by Shahdad Nowsherwani and his son Belooch Khan, given to plundering; and *Zeek* the residence of Dad Kerim Mirwani. On the south side are Balor, Chumbur, and Gushanak, which will be further noticed.

There are several Hindoo merchants residing in the various villages of Kolwah, who import cloth and other necessaries from India by way of Ormara, despatching grain, wool, and ghee to that port, and quantities of grain to Kej and Punjgoor, whence they receive in return the produce of those places.

Kolwah was formerly ruled from Kej, but has ceased to be so, and an agent of the Khan yearly receives the dues. As these are largely paid in grain the Hindoos obtain it at a cheap rate on these occasions.

Balor.

On the 27th I was at Balor, a Kowdai village with about 200 inhabitants. Here I obtained fresh camels for Jow. From Balor to Ormara is four days for laden camels, the road being hilly. From this place I proceeded along the south side of the valley to Chumbur, situated about 20 miles east. Here is (for Mekran) an imposing-looking fort, built on an eminence; it belongs to Mir Nundoo, the Naib of Ormara, who at the time of my visit had gone to Kelat. A nephew of his received me, and seemed anxious to make himself agreeable, but as I arrived at sunset and left early next morning I had little time to cultivate his acquaintance.

Gushanak.

On the 29th of September, at evening, I arrived at the fort of Gushanak, which much resembles Chumbur; round it is a village of 200 or 300 inhabitants. Gushanak is the seat of Wuli Mahomed, the Chief of the Mirwanis. This Chief displayed the usual amount of hospitality, sending presents of grain, forage, &c. The valley here trends more northerly. A little east of Gushanak we left the valley, and the road thenceforward to Jow lay amongst the hills to the south; though sometimes steep and stony the path is every where passable by laden camels; forage is procurable to a limited extent at several places along this route. On the evening of the 30th September I reached a river called the Pao Khor, which, flowing from the Mushki valley, here winds amongst the hills,

and lower down uniting with the "Jow" Khor, reaches the sea under the name of the Hingole. This day's march led through large groves of the Pish palm, which is turned by the natives to a variety of uses.

On the 1st October I halted at a fountain amongst the hills, near which is the grave of a Fuqueer, the place being accordingly named "Ziaret." There are no inhabitants. A few more miles took us clear of the hills, and the pretty valley of Jow presented itself to view.

Jow.

Through the centre in a south-westerly direction flows the Jow Khor, a pleasant flowing stream, which has its source far north, and lower down joins the Pao; the valley is well wooded, but possesses but little cultivated land; it is chiefly rich in herds of camels and buffaloes, and flocks of sheep and goats. The inhabitants are Bezunjoos, Mirwanis, and Ormeranis. From its situation Jow is exempt from raids and troubles, and is perhaps the most quiet, peaceable spot to be found in the country. At the south-eastern side is a fine lofty mountain called Daroon, on the summit of which is a grove of date trees and some fertile land; the road which leads to the top might be held by a few men against an army. The population of the valley is spare and chiefly pastoral. I halted at evening at a village on the river, where resides Suffer Khan (son of Fuqueer Mahomed, Naib of Kej), by whom I was very warmly welcomed. With him resides Sedeek, his father-in-law, who belongs to the Ormerani branch of the Bezunjoo tribe; this person has a great reputation for plundering. The village is small, and has no distinctive name; supplies are here plentiful.

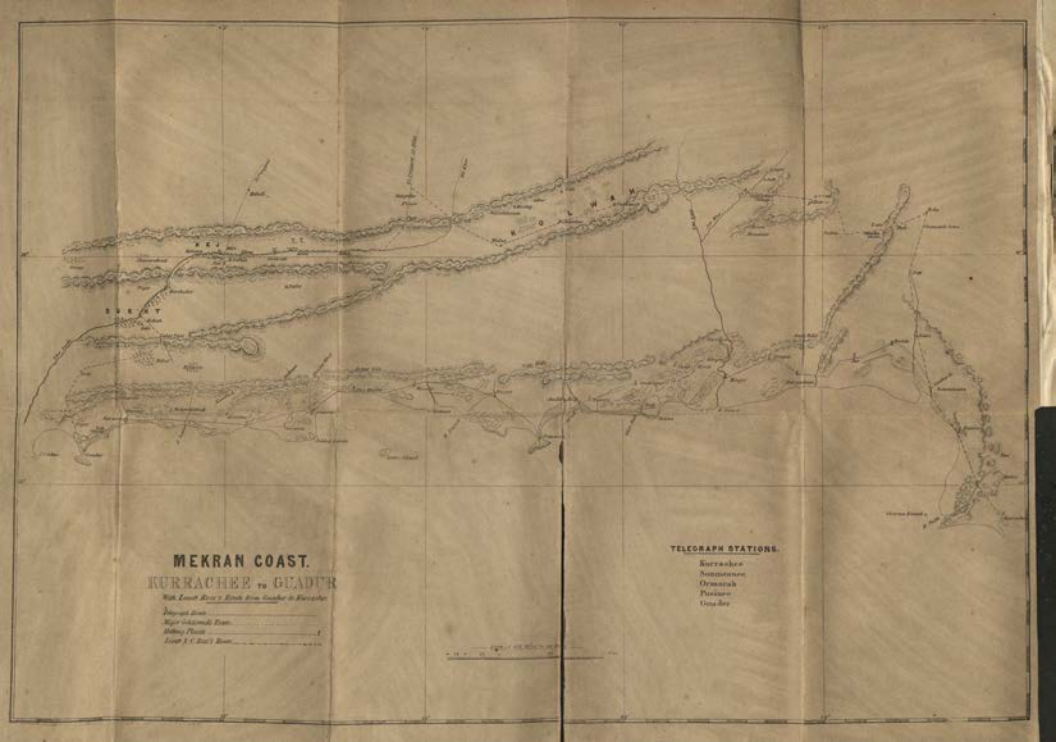
Remaining at Suffer Khan's village, on the 2nd, in the evening, having obtained fresh camels, I took the road to Bela, and passing through a sterile tract halted at a nullah 15 miles east. Between Jow and Bela there is no village, and I saw no inhabitants, but in the tracts named Arrah and Lukhsur there is a certain amount of grazing land.

The province of Lus Beyla is here divided from the western provinces by a lofty, well-defined range of mountains. The Lak or pass through these mountains is excessively steep, and is partly artificially constructed. The hills are of clayey formation, and a deep cutting has been made in one place, which is called the Lak. This place is extremely narrow, and laden camels are unable to pass; the loads are necessarily removed at the top or foot of the pass, and carried up and down by coolies. The construction of this pass is ascribed by the natives to the famous Per-

sian Statuary Ferhad, who pierced the hill, they say, to win the beautiful Shirin, who, according to local tradition, was a daughter of a former King of Lus Bela. The supposed tomb of the lovers is situated close to the Lak, and is a favourite resort of ladies to whom nature has denied families. A pool of water hard by where I halted on the 5th of October is called Koomb-i-Shirin, or the pool of Shirin; close by it is the grave of the old woman who is said to have betrayed them both to death. On it every Belooch who passes considers it his duty to cast a stone or piece of rubbish, and it was amusing to see the heap of stones and old shoes thus formed.

Koomb-i-Shirin.

On the afternoon of the 5th October I came to the part of the passage through the mountains known as the Lak; it is certainly a very steep descent, but the principal difficulty is its extreme narrowness. A practicable road for laden beasts might without difficulty be constructed, but the necessary funds are not as yet forthcoming. The steep pass being descended, a disagreeable stony road along the bed of a nullah follows, winding for several miles through the hills; at length emerging from the hills the level plain of Lus Bela is gained, and a few miles further on lies Bela, the capital of that Province. The change from Mekran, as well as being geographically well marked, is likewise in other respects, striking; the face of the country now presents a fertile comfortable aspect, and there are signs of greater order and regularity than met with to the west. At the period of my visit the Jam was a prisoner at Kelat, his son was also absent from the Capital. I informed the Dewan, the principal Official present, of the arrival of my party, and of my intention of proceeding the same day to Sonmiani. I was freely offered any assistance required, and a guide placed at my disposal. Leaving Bela on the evening of the 6th of October, I proceeded by forced marches to Kurrachee, where I arrived on the morning of the 9th October. To offer any description of this portion of the route would be superfluous, but understanding that the first part from Gwadur to Bela has not previously been reported on, I have embodied such practical information as I have been able to acquire regarding it in a separate and more concise form; a Map is also submitted. The lower part or coast line is copied from Colonel Goldsmid's survey, the upper half exhibiting the route now reported on cannot pretend to such accuracy, but as the Maps I have hitherto seen of this part of the country seem defective, I have thought it may not be useless.


MEKRAN COAST.
KURRACHEE TO GUADUR
TELEGRAPH STATIONS.
Kurrachee
Sonmeanee
Ormarah
Pusinee
Guadur

GWADUR TO KURRACHEE

BY

UPPER ROUTE.

ROUTE from Gwadur to Kurrachee, viâ Kej and Bela, pursued Septe

Date of Arrival.		Halting places.	Number of Hours.	Estimated distance in miles.	Total Distance in miles.	General Direction.	Observed Latitude nearly.		
							°	′	
Sept.	11	Tonk	8½	25		N.			
„	12	Beylar	7	21		E. by N.	25°	34′	
„	13	Kohuk	7	20		For 6 miles N. E. and for 14 miles N. W.			Kowda [illegible] Nullah.
„	14	Kuntadar	4	12		N. E.	25°	51′	Kowd[illegible] Ku[illegible]
					78				

Lieut. E. C. Ross, *Assistant to the Political Agent in Beloochistan, October* 1865.

Population.	Water.	Supplies.	Remarks on Route, Stations, &c.
None.	From well, scarce and bad.	None, forage scanty.	The road for twelve miles is northerly, across a level sandy plain. At 8 miles pass a patch of cultivation, and some palm trees to the right, called Nigoro. At 12 miles enter a low range of hills—here for two miles the road is bad, stony, but not very steep. Rest of road level and easy, country barren. At Tonk shady, and abundant food for camels. No water procurable between Gwadur and Tonk. Daram hills bear S. S. E. from camp 5 miles, estimated height 2,000 feet. Thermometer 108° in tent.
	Fair.	None.	From Tonk the road leads more easterly between two ranges of hills over a barren tract. Level easy road all the way. Plenty of shade at this halting place. Thermometer in tent 110°. S. E. the Daram range terminates.
[illegible] houses, [illegible]shtees and [illegible]wdaees.	.....	.....	From Beylar the road for six miles leads N. E. over hard barren country to the Talar Pass. After passing the hills it turns N. W. to a low hill range, crossing which, by an easy path enter the plain called Dusht. Nature of soil and country alters to fertile patches of cultivation and a good deal of low wood. At four miles from Kohuk pass Geki, a grove of date trees and a few huts. Here water is abundant. Cross the bed of the Dusht Khor close to Kohuk, now nearly quite dry. The course is here westerly. This latter part of the road is good. Kohuk is on the north side of the Khor.
[illegible] houses, [illegible]shtees and [illegible]rdaees.	From Khor, plenty and good.	Abundant.	The road from Kohuk re-crosses the bed of the Khor and leads N. E. along the left bank through fields of cotton and jungle; close to Kuntadar, it again crosses the Khor, this place being situated on the right bank. Good road all the way, and water readily obtained.

Date of Arrival.		Halting places.	Number of Hours.	Estimated distance in miles	Total distance in miles.	General Direction.	Observed Latitude nearly. °	′	Local Chief.
Sept.	15	Kej. Kalatok	7	20	78	N. E.	26°		Futteh Khan Gitchki.
	16	Kej. Killa-i-Now or Nuki Kalat...	2¼	7		E. by S.	25°	59′	Mir Bhaye Gitchki.
	17	Kej. Turbut	½	2		E.	25°	59′	None present.
,,	18	Halted, Turbut ...							
,,	19								
,,	20								
,,	21								
,,	22	Sami	7	20	49	E.	26°	1½	Mir Esa Gitchki.
					127				

Population.	Water.	Supplies.	Remarks on Route, Stations, &c.
100 houses.	Plenty and good.	Abundant.	Close to Kuntadar the road to Kej re-crosses the Khor, which is then left some distance to the left, and not seen again until close to Kej. For the first six miles the direction is north-easterly to a range of hills, which are crossed by an easy path; after which the direction is more easterly over barren stony ground. A few miles west of Kalatok the Khor (now Kej Khor) is crossed, and a fertile tract entered abounding with vegetation and groves of trees, and intersected by artificial water-courses. Hence the road skirts the date groves to Kalatok, which is situated north of the Khor.
200 houses.			Close to Kalatok the road to Killa-i-Now, &c., crosses the Khor and skirts the date groves,—south of it road good. Three miles east of Kalatok passed a place called Sengi Kalat. Opposite Killa-i-Now north of the Khor stands the Miri. From top of Miri took the following rough bearing:— Kalatok W. by S. ¼ S. miles. Killa-i-Now S. 2 miles. Gushtung S. ½ E. 2⅝ miles. Turbut E. S. E. 3 miles. Abser E. by S. 4 miles. From Killa-i-Now to Turbut is a good road ½ a mile south of Khor. S. E. of Killa-i-Now pass Gushtung Fort and Village. Turbut is ½ a mile south of the Khor. Numerous Karezes here and many wells; S. E. at 2 miles is a conical hill named Koh-i-Murad (Mount Desire) the Zikri shrine.
400 houses.			
500 houses.	From Kor and springs, good and plenty.	Abundant.	Still follow up the Khor which is crossed at Abser, the Eastern village of Kej, on a sort of island. Road level and stony, the valley becomes sterile until at 16 miles to Shahrak Fort and village, where is grove of date trees and some fields; four miles further on is Sami on the north of the Khor.

Date of Arrival.		Halting places.	Number of Hours.	Estimated distance in miles.	Total distance in miles.	General Direction.	Observed Latitude nearly. °	′	Local Chief.
Sept.	23	Hetok	4	12	127	E.			None.
,,	,,	By the river close to a Tomun	2	6		E.			
,,	24	By the river	2½	8		E.			None.
,,	,,	Side of Balgotter ...	3½	10		N.E.			None.
,,	25	Balgotter water ...	4	11		N. by E	26°	18′	None.
,,	,,	Kil Khor	4	12		S. E.			.....
,,	26	Kil Khor	½	2	61	S.	26°	8′	.....
					188				

Population.	Water.	Supplies.	Remarks on Route, Stations, &c.
Very spare, scattered, and variable pastoral.	From Khor, good and plenty.	None, but grass in abundance.	East of Sami the road, which leads both to Kolwa and Punjgoor, lies along the course of the Khor, which is frequently passed and repassed. At places the road runs up the stony bed of the Khor, and is disagreeable to travel, but every where level. Hetok is a name given to one part of the valley, where are several fields under cultivation. From that to Kolwah there is no cultivation in the valley but sufficient vegetation in most parts to supply food to flocks of goats and sheep which are kept by wandering Belooch tribes. Their Halks or Tomuns are but few and small.
Ditto.	From Khor	As above.	The Kolwah road which continues east along the valley was here left, the road to Punjgoor branching off and passing through the northern range of hills. The pass is winding for a mile but not difficult. Springs of water exist amongst the hills. By one of these north of the hills, is the usual halting place.
Ditto.	Very little from a fountain, good.	None, forage scarce.	It is a bad one, forage being scarcely obtainable.
None fixed.	Good, from spring, plenty.	Ditto	Across a level and arid plain, in general saltish, but in a few places fertile. North of Balgetter is again hilly country. A pond supplied by a spring is the only inducement to halt here.
None.	River.	None, forage obtainable.	A level easy road across Balgetter plain to the hills; previously crossed some groves of trees and plenty of vegetation along the banks of the Khor (here the Kil-Khor), and a running stream of clear water. During rains it becomes a torrent, and this Pass through the hills would be impracticable for baggage animals. The road is for some way down the bank of the river, and difficult at places.
Ditto.	Ditto.	Ditto.	

Date of Arrival.		Halting places.		Number of Hours.	Estimated distance in miles.	Total distance in miles.	General Direction.	Observed Latitude nearly.		Local Chief.
								°	′	
						188				
Sept.	26	Kolwah	Puk	4	12		E. S. E.			Chakur.
„	27		Balor	2	6		E. S. E.	26°	2′	Ibrahim.
„	28		Chumber	7	20		E. by N.			MirMun[illegible] Beezunjo[illegible]
„	29		Fuqueers' village	2	10		E. N. E.	26°	11½	Fuqu[illegible]
„	„		Gushanak	1½	5		E. N. E.			Mirwa[illegible] Wali Mahor Mirwa[illegible]
„	30		Spring of Water ...	4½	13		E. by N.	26°	16′	None.
„	„		Pao Khor or River.	2½	7		E. N. E.			None.
Oct.	1		Ziaret	4½	12		E. by N.			None.
						85				
						273				

Population.	Water.	Supplies.	Remarks on Route, Stations, &c.
Kowdaees, a dozen houses.	From wells, plenty.	Scarce.	Winding through the hills by an easy pass into the same valley before left. Road is over stony, barren land, intersected by numerous ravines. At Puk commences a better description of country. Traces of recent cultivation every where visible. The hills on either side of the valley are not very lofty here, and are about twelve miles apart.
Kowdaees, 50 houses.	Ditto.	Abundant, of all sorts.	To Balor through fields and thin jungle, a good road. Balor is close to the southern range of hills.
Mirwanis, Ormoranis, 100 houses.	Ditto.	Ditto.	Along the south side of the valley, pass through extensive fields of barley and jowari. The soil is very rich. Half way there is a good halting place by a well.
12 houses.	From pond, indifferent.	None, forage obtainable.	Good road, through same description of country. Numerous herds and flocks are met with; saw some antelope.
Mirwanis, 100 houses.	Wells, plenty.	Abundant.	The hills trend more northerly than before, their direction being about E. N. E. The rest of the road is good. Gushanak Fort is visible at a distance of some miles, being of considerable elevation. Road same description.
None.	Good and plenty.	None.	The road to Jow leaves the Kolwah valley at a few miles east of Gushanak and enters the southern hills, through which it leads for two marches. There are no inhabited places along this part of the route, but at convenient intervals, springs of water or streams were met with, near which forage was generally obtainable. The road is bad, in some places there are very steep and difficult ascents and descents. Pao Khor here winds through the hills, at present not flowing, but plenty of water remaining in pools flows from the Mushki valley, and further down, joining the Jow, they reach the sea as the Hingole river.
None.	From river.	None, forage scarce.	
None.	Spring, uncertain.	None, forage obtainable.	Road tolerably easy, winding amongst hills to a fountain in a small valley. The grave of a Peer gives the halting place the name of Ziaret.

Date of Arrival.		Halting places.	Number of Hours.	Estimated distance in miles.	Total distance in miles.	General Direction.	Observed Latitude nearly. °	′	Local Chief.
					273				
Oct.	1	Jow, Suffer Khan's village.	2	7		E. S. E.	26°	16′	Suffer Khan Bezunjoo.
,,	2	Halted at Jow.							
,,	3	A nullah.....	5	15		E.	26°	15½	None.
,,	4	Lukhsur.....	6½	17		E. and S.	26°	4′	.....
,,	5	Kombi Shirin.....	3	10		E. N E.	26°	7′	None.
,,	6	Bela		15		E. by N.			The Jam.
,,	7	Liari		35					
,,	8	Sonmiani		20					
,,	9	Kurrachee		45					
					164				
		Total distance, Miles	.....	.....	437				

Population.	Water.	Supplies.	Remarks on Route, Stations, &c.
40 houses.	River.	Abundant.	Three miles more of hill path from Ziaret and the valley of Jow appears in view. It is some twenty miles in length and ten or twelve in breadth, bounded on either side by hills, the general direction of which is E. N. E. The valley is in some parts thickly wooded, and watered by a river called here the Jow. From where the road emerges from the hills, 10 miles S. S. E. is a fine lofty mountain named Droon. Road through valley good. Cross the river to Suffer Khan's small village.
None.	Scarce, from nullah	None.	Soon leaving behind the woody fertile portion of the valley, the road passes through a dry barren tract at six miles; there is a steep difficult descent of about 200 feet. Thence the road is level. A pool of water in a nullah is a favourite halting place, but grass is very scarce.
Scattered, spare, pastoral, and wandering.	Ditto.	Ditto.	For eight miles the road is east through a small valley called Arrah, possessing some fertile soil, affording grass for a few flocks of goats and sheep. Two ranges of hills on either side, which at 8 miles converge. From that point the pass through these hills is very difficult, winding along the rocky bed of a nullah. The direction is then southerly, emerging on Lukhsur plain. Halting place by a nullah, containing water in pools.
Ditto.	None.	Ditto.	An easy level road to Koombi Shirin (Shirin's pool). Lofty hills three miles east, which are traversed by an excessively steep narrow pass called "Lak," here partly artificial. It is not more than ¼ of a mile. The mountains are lofty and of clayey formation. Having descended the Lak, the road winds among the hills along the bed of a dry nullah for at least six miles, when it emerges into the open on the Province of Las Bela, six or seven miles S. W. of the Capital.
.....	.....	Plentiful.	

Art. V.—Mr. RASSAM'S MISSION to the Emperor Theodorus of ABYSSINIA.—Account of Events from 28th January to 22nd March 1866. *Contributed by Government.*

Read before the Society, November 15th, 1866.

On the morning of the 28th January Mr. Rassam, accompanied by Dr. Blanc and Mr. Prideaux, came in sight of the Emperor's camp, which was pitched in the District of Damont, between Agan Mudar and Godjum. As they had received a courteous message from His Majesty on the road, about three miles from the camp, to the effect that he had graciously ordered all his Officers of State to meet them on the road and escort them to the Court, they halted at 11 A.M., for about 20 minutes, to put on their uniforms, in a small tent which was pitched for the occasion, in order that they might be in fitting costume to meet the Abyssinian grandees. At noon they met the Guard of Honour, that had been sent by His Majesty to welcome them. Ras Engada, the Chief Minister, came forward on foot to welcome them on the part of his Royal Master, and made many civil speeches through Samuel, the King's steward, who had been sent by the Emperor to interpret. Mr. Rassam and his companions immediately dismounted, and after some civil words had been said in answer to the royal message, Ras Engada presented Mr. Rassam with a fine mule, nicely caparisoned, saying that his Master sent it for him to ride into the royal camp. Ras Engada then rode before them with about 300 officers, the rest of the cavalry riding behind, and they proceeded in this order at a quiet pace till they reached the foot of the hill on which the King's pavilion was pitched. Here they dismounted and were invited by Ras Engada to take a little rest in a red cloth tent which had been pitched by order of the King for their reception.

After many polite speeches Ras Engada and Samuel left them, and went to report their arrival to the King. In the meanwhile refreshments were brought in, sent from the royal kitchen, together with a present of ten cows and as many sheep. About 3 o'clock Mr. Rassam received a very civil note from His Majesty wherein he expressed his

desire to see him. A verbal message accompanied the note to the effect that although the day was Sunday, the King could not delay the meeting any longer. Mr. Rassam and his companions accordingly repaired immediately to the royal pavilion. From the bottom of the hill they found musketeers ranged as a Guard of Honour on the right and left for their reception. And on coming in sight of the royal pavilion, the infantry soldiers began to discharge their muskets (no cannon being available) and continued to fire in regular order till the visitors were ushered into the royal presence. The pavilion was made of silk, and carpeted with the same material. The Emperor is a man of middle age, tall, well built, with aquiline nose and dark piercing eyes. His countenance shows resolution and a powerful mind, while his smile is full of sweetness. His Majesty received them sitting on a couch covered with silk, his throne having been left behind at Magdala, all the Ministers of state and officers of the court standing on either side of the tent. When Mr. Rassam had handed His Majesty the Queen's letter, and interchanged a few civil words befitting the occasion, they were invited to sit down on the right hand of the Emperor.

As the Royal Epistle was without a translation and as there was no one in the court who could read English, His Majesty laid it on the right side of the couch, and began by saying that he was glad to see Mr. Rassam, and that he hoped they were all well after the fatigue of the long journey. All the ministers remained standing and seemed very attentive to whatever was said by His Majesty, and by Mr. Rassam in reply. The King then opened up the subject of his grievances, and related everything that had taken place from the time of the death of Messrs. Plowden and Bell. He blamed in strong terms the conduct of the Missionaries and of Mr. Cameron. In reply to this Mr. Rassam spoke in a soothing way and apparently succeeded in allaying the royal anger. During the conversation Samuel was employed by the King as interpreter, and this officer was afterwards appointed as "Introducer" for Mr. Rassam (in accordance with the Abyssinian rule), an arrangement which appears to have been a satisfactory one, as Samuel knows Amharee and Arabic very well, and seems really desirous to promote a friendly feeling between England and Abyssinia. Soon after they had returned to their tent, after this interview, the King sent over Her Majesty's letter to be translated into Amharee. This occupied a considerable amount of time, as Mr. Rassam had to

translate it into Arabic, the interpreter and Samuel then retranslating it to the Chief Scribe in Amharee.

Very early next morning (29th January) the King sent for them. They found His Majesty standing outside the royal pavilion, and after being welcomed, they were invited to enter. When all the attendants, except Ras Engada, the Chief Scribe, Samuel, and Mr. Rassam's Mahomedan Interpreter had been ordered to withdraw, the King again recounted his complaints regarding the misconduct of the European prisoners. He then expressed himself much pleased at having at last seen Mr. Rassam, and said that the friendly intentions of England towards himself had been proved by Mr. Rassam's patience and good conduct; and concluded by ordering the Chief Scribe to read the letter which he had written to Her Majesty. This letter, which was afterwards sent to Mr. Rassam to be translated into English, was to the effect that the King had forgiven the European prisoners and made them over to Mr. Rassam; but the exact contents were not at this time made public.

The afternoon of the same day had been appointed for receiving the presents which Mr. Rassam had brought. He accordingly, about 5 P.M., brought the presents, and after making a suitable speech presented them to the King. His Majesty appeared much pleased, and, after making an appropriate answer, said that he accepted the gifts not for their value, but for the sake of the Giver, and in token of the renewal of friendship between himself and the British nation.

Next morning (30th January) the King intimated to Mr. Rassam that he intended him to go to Korata where he was to wait till the prisoners should be brought from Magdala. Korata is a large town, situated on the extreme limit of the S. E. side of the lake Suna, at an elevation of about 6,000 feet above the sea; and the Emperor had chosen it as the residence of his visitors on account of the cool breeze from the lake, and because they could there pass their time in fishing and shooting. They afterwards found the climate of Korata neither very hot nor very cold, the temperature averaging 75° in the day and 55° at night, but they did not find it as invigorating as they expected.

His Majesty had determined to accompany them on their way for one or two stages, and accordingly marched that morning as far as Sakala, accompanied by the whole army, estimated at about 45,000 fighting men, with about an equal number of followers, male

and female. The whole army is divided into four divisions, which always encamp round the Court in separate regiments, the favourite division being placed on the right side of the King. Most of the troops on this occasion had not their tents with them, so that every day the soldiers had to build grass huts for themselves. These huts are constructed with wonderful rapidity and with great attention to order and neatness, the huts of the privates being arranged in a circle with the huts or tents of the Officers in the centre. Every time they march, though it be only for a mile or two, the soldiers set fire to their huts, so that on leaving a place hardly any trace of the encampment is left.

On the morning of the 31st they marched from Sakala to Bugata in the Metcha District. The King's tent was here pitched on the top of a high hill overlooking parts of the Districts of Damont and of Metcha. These unhappy districts are under the wrath of His Majesty for having proved rebellious, and consequently he has determined to destroy them and leave them a waste, as a warning to the disobedient.

For the first two days of the march Mr. Rassam and his companions had followed in the rear of the army. As the King found that they had been considerably inconvenienced by the crowding and turmoil of the troops, he on the third day (1st February) invited them to ride with him at the head of the army. The king rides most gracefully, and it was a fine sight to see the whole army following him at a rapid pace, stopping when he stopped, and turning to the right or the left as he turned, as though the movements of this great mass had been directed by machinery. Those who rode with His Majesty were Ras Engada, Mr. Rassam, Dr. Blanc, Mr. Prideaux, Samuel, and the King's arm-bearers. On the march the King showed himself extremely kind and hospitable, sending them rations from his kitchen, and directing their tents to be pitched near his own on a spot which he himself pointed out.

Next day (2nd February) they marched soon after sunrise, and about 1000 yards from the encamping ground came to the river Abai (the source of the Blue Nile). His Majesty crossed the river on foot, and made Mr. Rassam and his companions ride, but as Mr. Rassam's mule found it difficult to carry him up the opposite bank, which was steep, the King told him to dismount, and while he was trying to climb the bank, condescendingly caught him by the arm and pulled him up.

saying in Arabic "ibshin la takhaf," that is, "Be of good cheer, be not afraid." He then remained standing on the bank, till he saw the road made sufficiently good for the army to pass. This day they halted at Omka, where there was a tremendous shower of rain. The thunder and lightning were frightful.

Next day (3rd February) the march was in the direction of Agan Modar, the last District through which the Mission had passed before reaching the King. The King on this day conversed with Mr. Rassam on various topics—the American war; the Ashantee war; the barbarity of the king of Dahomey; and the government of Madagascar. He also said to him, "The reason I did not at first give you an answer was because since the death of Messrs. Plowden and Bell all the English and Franks who visited my country proved to me insincere, ill-mannered, ill-behaved, and ill-tempered. I said to myself I must not see this English Agent before I find out that he is of a different temperament from those who created a breach between me and your Queen, my Friend. Your patience in waiting so long for an answer convinced me of your worth, and now as you have happily established the renewal of friendship between my country and England, I wish you to carry to your Queen my Friend, and to her Council, my anxiety to cultivate the friendship of England, which I have been longing for ever since I ascended the throne of Abyssinia." This day's march brought them to Fugata, passing through the well-cultivated and peaceful country of Agan Mudar, and it was most cheering to see how well His Majesty protected the crops of his faithful subjects, sending parties commanded by officers to guard the corn fields and villages against the ravages of the soldiery.

Next day (4th February) the king had much conversation with Mr. Rassam, and ended by telling him that he proposed to send him next day to Karata, allowing him to choose whether he would stay at Karata or at Debra Tabor, till the prisoners arrived. And after he had returned to his tent, he sent Mr. Rassam a most polite note informing him that he had sent him some guns and pistols and also 5,000 German crowns to spend in any manner he wished, "except in a way displeasing to God." These presents Mr. Rassam was obliged to accept as he was told that it would displease the king if he refused them. Twice afterwards the king gave Mr. Rassam a present of 5,000 dollars for the same purpose, and with the same admonition.

The next day (5th February) they left for Karata and crossed the S. E. eastern side of the lake from Wandigat, and slept one night on the island of Dach. The Emperor afterwards came to Zazag on the S. W. side of the lake, and not more tham 10 miles from Karata by water. This was after he had destroyed the Districts of Damont and Metcha.

As Mr. Rassam and his companions were to await at Karata the arrival of the prisoners, the Emperor sent to Debra Tabor and brought his European artizans to keep them company. Orders for the release of Mr. Cameron and the other Prisoners, were given on the 29th of January, but they were not released till the 24th February owing to the difficulties of travelling. They arrived safely at Karata on the 12th March. Mr. Cameron was at first very weak but rapidly improved ; all the rest were in perfect health. 18 persons, including 3 children, were made over by the Emperor to Mr. Rassam to conduct to Aden, or to Egypt if they went *viâ* Kharboum. The prisoners who were in chains at Magdala, were 4 English (one of them the wife of Mr. Rosenthal), 2 Germans, 2 Frenchmen, and 1 Italian ; and the persons who were detained at Gaffat, near Debra Tabor, were six Germans (one of them the wife of Mr. Flad), and the three children of the latter.

During the whole of this time the Emperor treated Mr. Rassam with the greatest kindness and consideration. He would not allow him to make presents to any of the people of the Court who had been kind and civil, but said—" keep your money for others of my people who render you service my friend, but if you wish to make any presents to those of my household, let me know the sum and I will pay it to them on your part." He, however, consented to allow him to invest those of his household with silk garments. He gave general orders that the servants of the Court should pay to Mr. Rassam the homage due to the representative of his Friend the Queen of England, and therefore when they presented themselves before him they always knelt and touched the ground with their foreheads. And when Mr. Rassam arrived by water at Karata, nearly 60 priests, dressed in canonicals, came out on the beach to meet him, bearing the symbols of the Abyssinian Church, chanting Psalms and praying for him. And this they did because the Emperor had commanded that they should receive Mr. Rassam with the same honours as they would

accord to himself. Every one, therefore, whether European or Abyssinian admitted that no sovereign could have been more attentive and gracious to the representative of a Foreign Government than Theodorus of Abyssinia was to Mr. Rassam.

The Emperor wished to see the released prisoners for the purpose of asking them before Mr. Rassam whether he was not right in what he did to them, in consequence of their misbehaviour. But Mr. Rassam fearing that their presence would irritate His Majesty, begged him to dispense with their presence. The Emperor accordingly agreed that Mr. Rassam should hold a court in his tent and have the charges read out to the released prisoners before all the European artizans of Gaffat, and before a number of the principal Abyssinian officers. The chief Amharee Scribe read out the charges. Then all the released prisoners confessed that they had done wrong, and begged that His Majesty, would forgive them as a fellow-Christian. And afterwards the Emperor wrote to Mr. Rassam and asked him to judge between him and the released prisoners: "If I have done them wrong, let me know, and I will remunerate them. But if you find them in fault, I will give them back my love." Further the Emperor ordered the translation of Her Majesty's letter and his answer thereto, to be read publicly by the chief Scribe. Then all heard what had been written in his letter. In the letter His Majesty asks that what has been done may be forgiven, and says, "In my humble position I am not worthy to address your Majesty, but illustrious princes and the deep ocean can bear anything. I being an ignorant Ethiopian hope that your Majesty will overlook my shortcomings and pardon my offences." And the letter ends thus: "Counsel me, but do not blame me, O Queen, whose Majesty God has glorified, and to whom He has given abundance of wisdom."

It was expected that Mr. Rassam and his party would leave after the Abyssinian Easter, which fell on the 8th April. But it was not certain what route they would take.

GULF OF TAJOURA.

SKETCH OF PORT OBOKH

by

Commander Dayman & G. H. Allen, Esq. R.N Master,

H.M.S HORNET.

July 1862.

Position Rock { Lat. 11° 57' N. / Long. 43° 15' E. } Approximate

ART. VI.—REPORT BY *Lieut. Col.* W. L. MEREWETHER, C.B., *Resident at Aden*, DESCRIBING THE VARIOUS PLACES LATELY VISITED BY HIM, BETWEEN ADEN AND SUEZ. *Contributed by Government.*

Read before the Society, December 20th, 1866.

I HAVE the honour to forward, for the information of His Excellency the Governor in Council, the following Report on the various places lately visited by me between Aden and Suez.

Obokh—the spot purchased a short time back by the French, is close to the entrance of the Red Sea, 45 miles south of Perim, about 110 miles from Aden, and six miles to the westward of Ras Bir. It may be called a Bay, having Ras Bir on the eastern corner, and a small low headland, Ras Obokh, on the western. The general coast line lies almost due east and west. The Harbour is at the Ras Obokh end of the above Bay, formed by coral reefs stretching across that part of it, leaving only a narrow entrance of about 300 yards wide. In this channel and inside there is deep water, and good anchorage in 10 fathoms, but the space is limited, and with most careful packing would not allow of more than 10 small-sized vessels being accommodated, moored stem and stern. The anchorage is protected from the heavy swell during the South-west and North-east Monsoons by the coral reefs, but no sailing vessel could get out of the Harbour during the former, as the wind would be blowing dead into the entrance. The anchorage is about 800 yards from the shore. A Wadi or narrow valley with a dry water course in the centre comes to the shore immediately opposite the anchorage. Excellent water is obtained by digging six feet in the bed of the water-course, and whenever heavy rain falls in the interior, as it does occasionally, water comes down in good quantity and in considerable force. This had been the case shortly before my arrival; the beach was strewn with fragments of trees, some of them large, heavy pieces, which had been brought down by the water. This supply might easily be secured and preserved by the formation of tanks near the water-course. The valley is full of low Babul trees, and these were visible as far as the eye could follow it inland. There

was also abundance of the rich creeper grass, known in India as Hurryali. On the west side of the valley is a fine, clear, and extensive plateau, raised about 60 feet above the level of the sea, an excellent position for a settlement. The wind during the summer months blows constantly from the South-west, which would be direct off the sea on to this plateau. The water would be close by in the Wadi, and forage plentiful there also. But there is the one important drawback of no supplies being procurable with the exception of meat and ghee. There is no place worthy of the name of a town nearer than Tajura, 35 miles off. The inhabitants of the country are Dunkellis, pure nomads, who move where grazing is best. No grain whatever is grown in the country; when any can be procured from Aden the Dunkellis use it, but, this exhausted, they live on meat and milk only, like the Somallees. There were two Dunkelli shepherds tending their goats and camels, with one of whom I conversed, but otherwise not a living thing was visible. The first range of hills, a low one, looked about 20 miles distant, backed by a second much higher range. Coal is said to exist in the latter to the north-west. The French sank some wells in the water-course; these have been filled up again by subsequent floods. They have also set up two piles of coral about 10 feet high each, one on Ras Obokh, the other on the edge of the Wadi about 1,000 yards from the shore, evidently as beacons. Beyond this nothing seems to have been done. The shepherd said the French had bought the place from his Sooltan Deeme, of Roheita. The hill on which the large plateau is, consists of sandstone and coral, the latter was found cropping out close to the top of the hill, showing a comparative recent up-heaval, or that the sea had once a very much higher level than it has now. A rough sketch chart is appended.

Massowa.—The chief place of export from Abyssinia, about 300 miles north north-west of the straits of Babel Mandeb, and 400 from Aden. The navigation is simple and easy until nearing Massowa, when the numerous islands called the Dhalac group, and many coral reefs make great caution necessary, and daylight a desideratum; the passage can be done at night, but this is avoided if possible. If the night is very dark and hazy, so that the land cannot be seen, vessels generally anchor outside the group and run in the following morning. Massowa being an island, the anchorage is well protected from the prevailing strong breezes by being in the channel between it and the mainland.

There is abundance of water in the centre, and the channel is fully 600 yards across, but on the northern mainland side a coral reef extends a short distance from the shore. The entrance is from the north-east the other end of the passage is closed for shipping of any draft by coral rocks. At the entrance of the channel, on the left, is a small round Tower which can scarcely be dignified with the name of Fort. Near this some guns are mounted, but on the ground, not on the Tower. Artillerymen and Infantry are located close by to the number, it was said, of 1000. These had only arrived a few days before from Egypt, brought down in a Steam Frigate. Formerly the Island was held by Turkish Troops and a Governor appointed from Constantinople, but recently this side of the Red Sea from Suez to Massowa has been handed over to the Egyptian Government. The new Garrison is much larger than the old one, and eight fresh guns, apparently long 12-pounders, in excellent order, have been added to the previously existing four small, old, rusty iron guns. The Island, which is small, is nearly covered by official buildings and a cemetery. The Kaimakan, Governor, appears to have a tolerable house, three-storied, but the remainder are wretched to a degree, particularly those of the English and French Consuls, which would be considered unsuited as habitations in a good and cool climate, how much more unfitted for such a climate as Massowa. However no one, excepting the Kaimakan and Troops, not even Merchants, remain on the Island longer than can be helped: they have all other houses at Uthumloo or Moncooloo, villages three and four miles inland, and merely visit Massowa in the morning for business, returning to their country houses in the evening. The climate during the cold season, from the beginning of November to the end of March, is pleasant enough, but the remaining months are very trying; often dead stagnation of atmosphere with not a breath of wind to ruffle the smooth surface of the sea. There is great dampness in the air at the same time which makes it more weakening. A few cases of cholera had occurred, but as they were confined to the newly-arrived Troops, who had been given at first bad water to drink, I believe it to be simply sporadic, and not a return of the epidemic of last year.

The intelligence from Abyssinia was equally satisfactory with that previously received. The Mission and released captives had not started on their downward journey on the 9th April, but it was expected they would do so in a few days. This subject is treated of in a separate despatch.

The *Victoria* saluted the Turkish flag on anchoring, this was returned immediately, and the new Kaimakan paid me a visit on board shortly afterwards.

I had an opportunity of making the acquaintance of Monsieur Munzinger, a Swiss gentleman, who since last October has been in charge of the British Consulate. He is a most intelligent person, active both in mind and body, and full of most useful information regarding Abyssinia. His services have been very valuable in maintaining communication with the Mission since its departure up-country, and he has spared no exertion both to ensure the safe arrival there and receipt here of letters, and to obtain the best and most reliable information of later date than the letters would convey.

There are several French gentlemen at Massowa, also a French Bishop with attendant Clergymen. The Bishop does not, I believe, contemplate going beyond Massowa himself, but he will probably send some of his attendants up-country to visit the very large Roman Catholic community in the interior.

There is a Conte de Rivoir at Massowa, one of those who had been associated with the Conte de Mounot in the latter's proposed Settlement at Hallai, partly of a sporting, partly of a commercial, nature. There was also a body of Frenchmen from Egypt engaged in a search along the coast for coal. One of them had been suffering greatly from dysentery and fever, but was unable to leave the place for want of funds, his expected supply not having reached. Remembering the cordial readiness with which the Commander of H. I. M. S. *Surcouf* afforded us assistance last year, I have given this gentleman a public passage to Suez on board the *Victoria*, which I trust will meet with the approval of His Excellency the Governor in Council. Their search for coal has to a certain extent been successful. They found it first on an Island called Huakil, about 70 miles below Massowa. This Island is hilly, and the coal was noticed on the surface of the ground, evidently forced up by volcanic action. On examining the hills on the mainland to the westward, it was discovered in a section in the second range displayed to view by a deep rent. Specimens had been sent to Cairo and Paris for examination, but the result had not been received. I was sorry not to be able to obtain a fragment. If it proves fair coal, it can be more easily and usefully worked than that at Gullailee, and will be a very valuable discovery. I may be able to learn something about it in Egypt. I found Dr. and Mrs.

Beke at Massowa. They had only arrived from Hallai the day before. He talked of remaining until he received a reply from the King, but I pointed out to him that the object for which he came, the release of the prisoners, had been accomplished, and that his remaining longer in the country was quite unnecessary; he had therefore better take advantage of the opportunity of my going to Suez to return there. I felt he was better away from the place, as his continued presence might lead to a misapprehension of his object, and give rise to reports which would be forwarded to the King, and might yet complicate matters. He followed my advice, and is also on board the *Victoria*.

Berenice.—It had been my intention to proceed next to Suakin, but I was told that at this season of the year strong head winds might be met in the upper portion of the Red Sea, on which account it would be well not to run the supply of coal too close, and going into Suakin might do so. I therefore abandoned the intention. It is a well-known place, regularly visited now by Egyptian Steamers from Suez, and I preferred making sure of being able to see Berenice and Cosseir, the first being a place almost unknown, and having to inquire at the latter regarding the Government Coal deposited three years ago. Soon after leaving Massowa, when the northern end of the the Dhalai group was cleared, course was taken for that usually held by the Mail Steamers going up and down the Red Sea. This was followed till the Island of St. John, 520 miles from Massowa. The Mail Steamer line was there left, and the course changed to about north-west and by west to Macour Island, 24 miles. Opposite this Island the mainland runs from west to east nearly to a low sandy point, Ras Bunass. The best passage to Berenice is between Macour Island and the mainland: coral reefs exist on the edge of both, and rocks also on the mainland side, but between them is deep water and a channel quite two miles broad between the reefs. After running seven miles through this channel about W. S. W. open deep water is reached, but it is advisable to clear the dangers in Foul Bay, then right ahead, to run up north-west five miles, which brings a vessel within about two miles of the coast, along which she would then run nearly west six miles further to the sandy spit at the east entrance of Berenice Harbour. There is deep water the whole way, no danger whatever excepting a coral reef which extends a short distance out from the spit, but is clearly perceptible from a ship's deck. The actual Harbour of Berenice is a creek, running

about N. N. W. having the mainland on the west side and the sandy spit on the east. It is more than two miles wide, extends with diminishing breadth for nearly three miles, and is most perfectly protected. The opportunity was an excellent one for judging of its security against heavy weather, for it was blowing very hard indeed, a Suez north-wester, on the 17th when we ran in, yet the water in the creek was smooth as could be desired. On the eastward of the spit is a large bay with deep water, beyond that the mainland tending eastwards to Ras Bunass, having a range of hills running paralled to the coast line. On the north of the Bay and the creek the same range completely shelters the anchorage. On the west the mainland runs nearly north and south, with high mountains a short distance inland, while the south is protected from all swell by the reefs in Foul Bay. No better refuge could be found on any part of the coast. The entrance by day is most simple and easy, and with one Light-house on the reef at the north-eastern end of Macour Island, and another on the reef at the end of the sandspit, where the harbour commences, steam vessels could enter at any hour of the night. It would be best to have the first light on the Macour reef, because of the sunken rocks just outside the opposite reef, which make it advisable to give them a wide berth and to hug rather the Macour side.

The shore was inspected in the afternoon. The ruins of ancient Berenice, about a mile from and nearly abreast of where the *Victoria* was anchored, are close to the shore, covered with sand excepting in one spot, where a portion of a building, probably the temple, was exposed. This had been done by excavation, most likely by Captain Mousley of the Indian Navy, when surveying this coast thirty years ago. A German gentleman by name Baron Theodore Von Heuglin visited this spot very recently, but I am not aware that he attempted any excavation. The mounds which cover a very considerable area resemble those of similar ruined cities in the East. The surface was strewed with fragments of glass, pottery, stone, bits of copper, and even during the short inspection we had time to make, a few coins were picked up. These I purpose taking to England with me for examination, as also the specimens of glass, &c. The substance used in the building exposed appeared to be nothing but madrepore. Time might be well and most usefully given to systematic excavation here, when much of great interest and importance to historical research might be found,

for the ruins have evidently never been trespassed on in that way, and probably never have been disturbed since the abandonment of the Port some two thousand years ago. The tracks of two men, three camels, some antelope, a hyena, and a fox were the only signs of living creatures observed. There are low hills close by, backed by a very high range, the latter distant not more than 20 or 25 miles; in them three conical hills were noticed, their tops having all the appearance of volcanoes in a state of activity at no very distant date. This range appears to end suddenly, or to trend westwards, a short distance to the north, and trees, apparently of the mimosa species, the same as at Obokh, were visible as far as we could see up what seemed to be a very considerable valley, in which I have no doubt water would readily be found, for it cannot be supposed that a large and flourishing city existed here without a sufficient supply of fresh water, or that rain does not sometimes fall on and come down from the adjacent high hills. No large watercourse was seen to enter the sea, doubtless they exist inland, but there was a small one joined a creek just behind and rather below the ruins; and in and near this Babool trees were also growing. The only one objectionable point was the landing. A coral reef runs along the shore at a distance of 400 yards, beyond this no boat can go. But there would be no difficulty whatever in overcoming this, a pier could be made with the greatest possible ease, and in a very short time, with the coral itself, which abounds here, and immediately outside the reef is abundance of water, 7 fathoms deep, enough for shipping to come up to the pier head.

The advisability of finding a more suitable port than Suez, below the Gulf of that name, has, I believe, been discussed for some time. We cannot do far wrong if we look to the ancient lines of trade for what is required. Ptolemy Philadelphus in the 3rd century B. C., turning his attention to external trade, established three ports in the Red Sea—

Arsinoa ..... Suez.
Myas Honnus .... Cosseir.
Berenice.

The latter was the most flourishing of the three, and no wonder, for it is undoubtedly the best harbour, and the one most favourably situated for communication with the rich countries of the East. It is naturally

most admirably protected, and being so far down the Red Sea, is almost clear of those strong northerly winds which, combined with rocks, make the upper part so dangerous of navigation. On the land side it is only 160 miles from Assouan on the hill, where the 1st cataract is met, and below which that river is navigable. In these days of railroads, one from Cairo to Assouan, 300 or so miles, is not an unlikely thing to look for; indeed for part of the way one has been arranged for, I believe, by the Egyptian Government. The continuation to Berenice would naturally follow. By making this port the point of departure for Steamers for India, China, and Australia, two days coaling would be saved and the worst of the Red Sea avoided. The Electric telegraph could be again taken to Aden, but this time it should be attempted by means of an aerial line from Berenice, or from Suakin, down the coast to opposite Perim, and then be taken across into Arabia. The inhabitants down the coast are scanty, but they are all open to work for pay, and with proper arrangements would look after the line as well as any. It was unfortunate not being able to communicate with any one at Berenice, but the people there and in its neighbourhood are simple shepherds, and said to be well-disposed. The *Victoria* was brought out on the morning of the 18th instant by her Commander Lieutenant Carpendale, I. N., as well and as easily as she was taken in the day before. She is, I fancy, the first steamer that has ever visited the place.

I would here add a translation of an account of the Baron Von Heuglin's visit to Berenice, which has been made and kindly placed at my disposal by Dr. Beke. It gives some information regarding the interior, which I was unable to obtain on the spot:—

Extract from Travels in North-Eastern Africa and down the Red Sea in 1857, *by Theodore Von Heuglin, taken from Peterman's Mitherlungen,* 1860, *pp.* 333, 334.

"6th July (1857).—At 11 A.M. our boats landed near the ruins of Berenice on the west shore of the Gulf. The place is now called Sibrét Djebeli (the southernmost Sibrét or Sibritat), which name, with the distinctive appellation of *El Soqhin,* is also borne by the ruins of the ancient city of Senskit, lying about 30 miles further in the interior, at the foot of Djebel Sobára.

"Berenice, which, unlike Senskit, was only a commercial station, cannot well have existed before the time of the Ptolemies, and Ptolemy II. Philadelphus, formed here the emporium named in honour of his mother, the wife of Ptolemy Soter I., the ruins of which lie on a small elevation close to the shore of the west side of the Gulf; there is however no proper port anywhere in the immediate neighbourhood. The shore is flat and sandy, but as the adjacent hills and valleys are approached it becomes more cheerful from broad patches of grass, mimosa, and tamarisk trees; the high mountain chains to the N. W., W., and S. W. impart a certain charm to the place. If an opinion may be formed from the extent of the ruins, the city must have been of considerable size. It does not appear to have possessed any fortifications. In about the centre of the place, and at the highest part of the same is a Temple constructed of large blocks of coral of very course grain and of recent formation; the interior of the temple is inaccessible, it being covered with sand as high as the roof; and the surface of the stone is so ruined by the effects of the air and of saline earth, that without further excavations no inscriptions or ornaments are visible, with the exception of some hexagonal stars, placed at regular intervals on a piece of the ceiling, which has been removed. Signs of recent excavations are observable, and in the vicinity we found several copper nails, pieces of small bronze statues, numerous Roman coins, a sistrum of quartz, rough pieces of beryl, and a quantity of broken earthenware and glass vessels. The building materials appear to have come direct from the neighbouring bay, as it consists of unwrought lumps of madrepore. At the present day there is no water to be found on the coast of Berenice, which therefore is no longer inhabited, except during the cold season. Not a few families however of the Abubdehs are said to dwell in the mountains, with their goats, sheep, and camels. Nomade tribes inhabit the mountains between Suez and Djebel Ferajed, about 16 miles to the south of this, where the large tribe of the Beshamis begins, extending as far as the province of Suakin. In ancient times an easy road by land led through nine water stations to Diospolis and Koptu on the Nile. Probably the goddess Isis was worshipped in the Temple here, or at all events in the neighbouring city of Senskit, for I remember to have seen mention of an 'Isis of Senskit' in the inscription at Shiloe, and in the quarries near Assonan. At the time of the S. W. monsoon the sea level of the Gulf of Berenice is said to be considerably higher

than at present, and at that time, the large back ground, which now shows a number of dry places, and the further end of the bay, is quite overflowed, so that Arabian boats can run up there."

For examination of coast line, soundings, &c., I would refer to Mousley's Chart of the Red Sea, in four sheets; No. 2 Sheet, Latitude 23° to 25°, published in 1836.

Cosseir.—This place was reached at 8 A.M. on the 19th instant. We landed immediately and were taken by the Governor of the place, an old Officer of the Egyptian Navy, to his house, which forms also the Custom house; a large quadrangular building with upper story and open court-yard in the centre, where goods were deposited. It is curious that at Bunder Abbas at the entrance of the Persian Gulf, opposite the famous Island of Ormus, is a *precisely similar* building; this would help to prove communication between the two ports, extending in all probability back to their first foundation. After the decline and abandonment of Berenice, the trade by sea from the great emporium on the Persian Coast would be continued to Cosseir alone, and is carried on to the present day, but to a very trifling extent now.

The town of Cosseir is situated immediately on the sea shore; landing is easily effected by means of a very fair wooden pier 80 yards long. It has all the appearance of having been once a well-to-do and flourishing place. The houses are all built of stone, sandstone, or chalk from the neighbouring hills, and the streets, which are kept scrupulously clean, are regular and at short intervals, running at right angles to each other. The bazaar showed a considerable number of shops, but they were nearly all closed and the few that were occupied showed very small store. The Governor informed me that since the railroad was made from Cairo to Suez, and steamers ran regularly from that port to Jedda, Suakin, &c., trade had almost entirely left Cosseir. We visited the residence of the Telegraph Officials, a double-roofed, narrow wooden building on a hillock north of the town. It was closed and apparently well looked after. Below was the Telegraph Office, a small stone building. The Government Coal Depôt was immediately behind, a large covered-in godown, the roof supported by stone pillars. There was no coal whatever, only a hundred or so old gunny bags. I inquired but could obtain no information as to how, or by whom the coal formerly deposited here had been expended. The oldest official in the place was

only of six years standing, and no written record could be found. There is a Fort on the north side, but of no strength ; square, built of rough blocks of stone and mud cement, having bastions at each corner, and double gate in the centre of the face opposite the town. The interior is open and clear ; there is a parapet all round, and on the side overlooking the town and harbour six iron guns, 6-pounders, French, were mounted, one turned slightly towards the hills; down below was another iron gun of smaller calibre, dismounted, and a brass mortar on a bed, about 9 inches, having on it a French inscription to the effect that it belonged to the French Republic, with the words " Liberté Egalité." There was a well inside the Fort, but the water in it was very salt and unfit for use. Harbour there can be said to be none. It is a purely open road-stead, protected somewhat from the north-westerly winds and swell by the coast running round slightly to the eastwards to a point at the extremity of which is a coral reef extending a short distance further out. Within this point and reef is another coral bed, ending abruptly and in a strait line for about 400 yards at right angles to the shore immediately opposite the Custom House. Along this line country-vessels lie, moored stem and stern. At two hundred yards farther out and still protected somewhat by the point is good anchorage in seven fathoms. But should strong winds from the S. E., S., or S. W. set in, the position would be a dangerous one, being utterly unprotected in those directions.

The Governor had with him two Europeans, one a Greek, who announced himself as Agent from the Egyptian Government, the other a German, Doctor and Geologist. They all agreed that the climate was excellent, a sea-breeze always prevailed, and the thermometer was never known to exceed 26° of Reaumer or less than 90° of Fahrenheit. The Doctor said there was scarcely any sickness in the Town, mortality about 12 per annum only, and, last year, when cholera existed so generally, they had only three cases. The life is monotonous, but they vary it occasionally by a trip to the hill. The road they said was very easy and a good camel would reach Genah in three days. The want of good water at Cosseir is a great drawback ; drinking water has to be brought from a place 24 hours distant. We returned on board by 11 A.M. and proceeded on to Suez, which was reached this morning.

I am about to disembark to avail myself of the leave granted by His Excellency the Governor in Council.

Art. VII.—MEMORANDUM on the GEOLOGICAL ACTION on the SOUTH COAST of KATTYAWAR, and in the RUNN of KUTCH. *By* William Sowerby, Esq., C.E., F.G.S. *Contributed by the Author.*

Read before the Society, September 26th, 1867.

The attention of the Government of Bombay was some short time ago directed by an article in the *Bombay Saturday Review* to two very important questions, namely, the filling up of the eastern shores of the Gulf of Cambay, and the supposed depression of the Runn of Kutch.

The question was referred to Professor Oldham, Director of the Geological Survey of India, for his opinion and advice, and his Memorandum was recently published, together with a resolution determining to have proper soundings made and also suitable bench-marks fixed in order to determine the question of the depression of the Runn. The relative elevation of these permanent bench marks was to be ascertained with reference to the "*Mean sea level,*" and in order to fix the "Mean sea level," a series of observations were to be made extending over several lunations.

In his Memorandum Dr. Oldham observed that "these evidences of a change in the relative level of land and sea derived from facts observed in the Runn of Kutch, are only a very small portion of similar facts which have been noticed elsewhere round the Coast of India. These occur almost everywhere along the entire coast, and for the most part they point to a rise in the land."

Dr. Oldham also says, in another part of his memorandum; "that in every case in which such a secular change of level has been established, the change has not amounted to more than a few inches, or a foot or two in a hundred years." It is thus evident that he regards these secular changes of level or gradual upheaval as established facts, and indeed this theory of the gradual rise or depression as the case may be, is one that is very commonly accepted by Geologists, whereas the real truth is that there is a gradual alteration of the "*Mean sea level,*" which is easily accounted for by causes not difficult to understand or explain, without much theorising on the subject.

It is a well-known fact that the tidal rise varies in different localities along every coast line. At Cochin, for instance, there is little or no tide, while at Bombay there is about 12 feet; at the mouth of the Taptee 19 feet; and at the head of the Gulf of Cambay it is 28 feet. Between Kinnaird Head on the East Coast of Scotland (where the tidal rise is 11 feet) and Lynn Deeps (where it rises 23 feet) there is a difference of 12 feet; while on the Dogger Bank in the middle of the North Sea, there is a perceptible rise of only one foot, as ascertained by Captain Hewitt; and on the opposite coast of Europe the tide is about 10 feet. Consequently during flood-tide the surface of the ocean assumes a concave form, while during ebbtide it is of a convex form. This fact was also proved by the Rev. Dr. Whewell, Trinity College, Cambridge.

It has been assumed by Geologists that, from ascertained data, having reference to the "Mean sea level," the Coast of Norway has been gradually rising; but it is a much more reasonable assumption, where such extraordinary differences of level are known to exist in the adjacent seas, that the mean sea level has become depressed, or rather that the flow of the tidal wave has been gradually diverted by the growth of banks in the bed of the sea, or by some deflective influence consequent on the removal or formation of shoals or head-lands by the tidal scour, and tidal deposit.

Mr. Murray has, in a paper read at the Institution of Civil Engineers in 1861, fully discussed this important point as regards the German Ocean, and has completely proved that the accretion and denudation of the land is entirely due to tidal action, and is no way due to the gradual rising or depression of the land itself by volcanic action; sudden local depressions and elevations have taken place, doubtless caused by earthquakes, but where there is what is termed "an apparent gradual depression or upheaval," it is really nothing but a change in the relative elevation of the tidal wave.

In the memoir submitted to Government in 1864 by the writer of this memorandum, on the Havens of the Western Coast of India, the silting up of the Gulf of Cambay is alluded to, and the action of the tidal wave shown and discussed, as will be seen in the following extract:—

The Gulf of Cambay is at the head of the great tidal wave which flows into the Indian Ocean, and is here heaped up in an extraordinary manner, having a rise of 28 feet during spring tides, which occur at 5 hours 20 minutes. Full and change at Cambay. The corresponding node of this great tidal wave is at the Maldive Islands.

From an examination of the co-tidal lines drawn from ascertained data, it is evident that the tidal wave sets into the Gulf from a South-Westerly direction, and is in fact a considerable way up it before reaching the mouth of the Taptee River on the East shores. There are five large rivers which empty themselves into the Gulf of Cambay, and it is from the detritus brought down by these rivers that the banks are formed at the entrance into the Gulf. Shallow soundings of 20 fathoms only, extend for a distance of 100 miles beyond the entrance of the Gulf. The line of 20 fathoms soundings runs from immediately opposite Bombay in a North-Westerly direction up to the entrance to the Gulf of Kutch. The waters over this expanse of sea are thick and muddy, containing matter in suspension, a portion of which is gradually deposited at the bottom of the sea, thus increasing the banks. It would be interesting to ascertain by a comparison of soundings at distant periods at what rate this deposit takes place, but owing to the great tidal rise and the scouring process going on at the bottom of the ocean, especially the latter, it is believed that the deposit is exceedingly slow, and that much of the detritus is carried down by the ebb-tide along the coast to the node of the tide near the Maldive and Lacadive Islands.

The peculiar scouring and grinding process is very clearly shown to a depth of 50 fathoms by the soundings (see Model Chart), though it has usually been assumed that the action of the sea does not affect the bottom at a greater depth than ten fathoms—the effect of the prevailing strong winds can however be traced to a very much greater depth. By an inspection of the Chart it is evident from the soundings that the greatest effect produced by this scouring process is on the *Eastern* side of the Gulf."

Dr. Oldham in his memorandum assumes that the detritus brought down by the Taptee and other Rivers in the Gulf of Cambay is depo-

sited at their mouths, and that the sea is receding along the coast. This however is only partially the case, as will be readily seen by examining a Model Chart of the Coast, for most of the silt or detritus is carried away by the scour of the receding tidal wave. This detritus finds its way gradually down the Coast—where it is deposited on "*Direction*," "*Angria*," "*Adas*," and other banks, a portion finding a resting place at the Lacadive and Maldive Islands.

The line of 15 fathoms water along the coast is :—

7 miles distant from the shore at the Taptee,
16 miles do. do. at Bulsar,
6 miles at Danoo, where the coast line projects,
20 miles at Bassein,
16 miles opposite Bombay,
and 10 miles opposite Rajpoor.

But the greatest accumulation near the Gulf of Cambay is on the *Western* shore or South-East Coast of Kattyawar, between Diu, Jaffrabad, and Goapanath, where the 15 fathoms' line extends out to upwards of 46 nautical miles in a South-Easterly direction, like a huge submarine groyne. It is this bank which checks the great tidal wave coming round from the South-East and causes it to heap up near and into the Runn of Cutch, and to scour away the adjacent coast; and as this bank extends, the effect will in a proportionate degree be increased, so that part of the waters at present heaped up in the Gulf of Cambay to a height of 28 feet (and formerly no doubt to a much greater height, judging from the appearance of the adjacent coasts on either side) will increase the elevation, and the proposed bench-marks will show the relative height of the mean sea level.

This opinion is contrary to the one usually adopted, but there is no want of substantial and reliable proofs to support this view of the subject; and as these proofs are very close at hand, it will be as well perhaps to give one or two illustrations such as will help to establish more firmly the opinion put forth.

Take the Taptee River for example. Large vessels formerly sailed up to Surat, but there is no record as to the height of the tidal rise at that time; doubtless the river has since that time silted up considerably. The present tidal rise is about 19 feet at its mouth and 12 feet at Surat during spring tides. The mouth of the river itself is a broad

4 miles wide, and it is in a recess quite protected from the down scour of the Gulf of Cambay by a point running out South-West at Vaux's Tomb. The result has been a great increase of the bar at the entrance of the Taptee, and the tidal wave has to overcome this bar at its mouth before it passes on to Surat; the consequence is a much less tidal rise there than formerly; but it would be absurd therefore to assume that the land at Surat had gradually risen because the mean sea level in the river has been lowered by a cause which is very obvious—namely, the bar at the mouth.

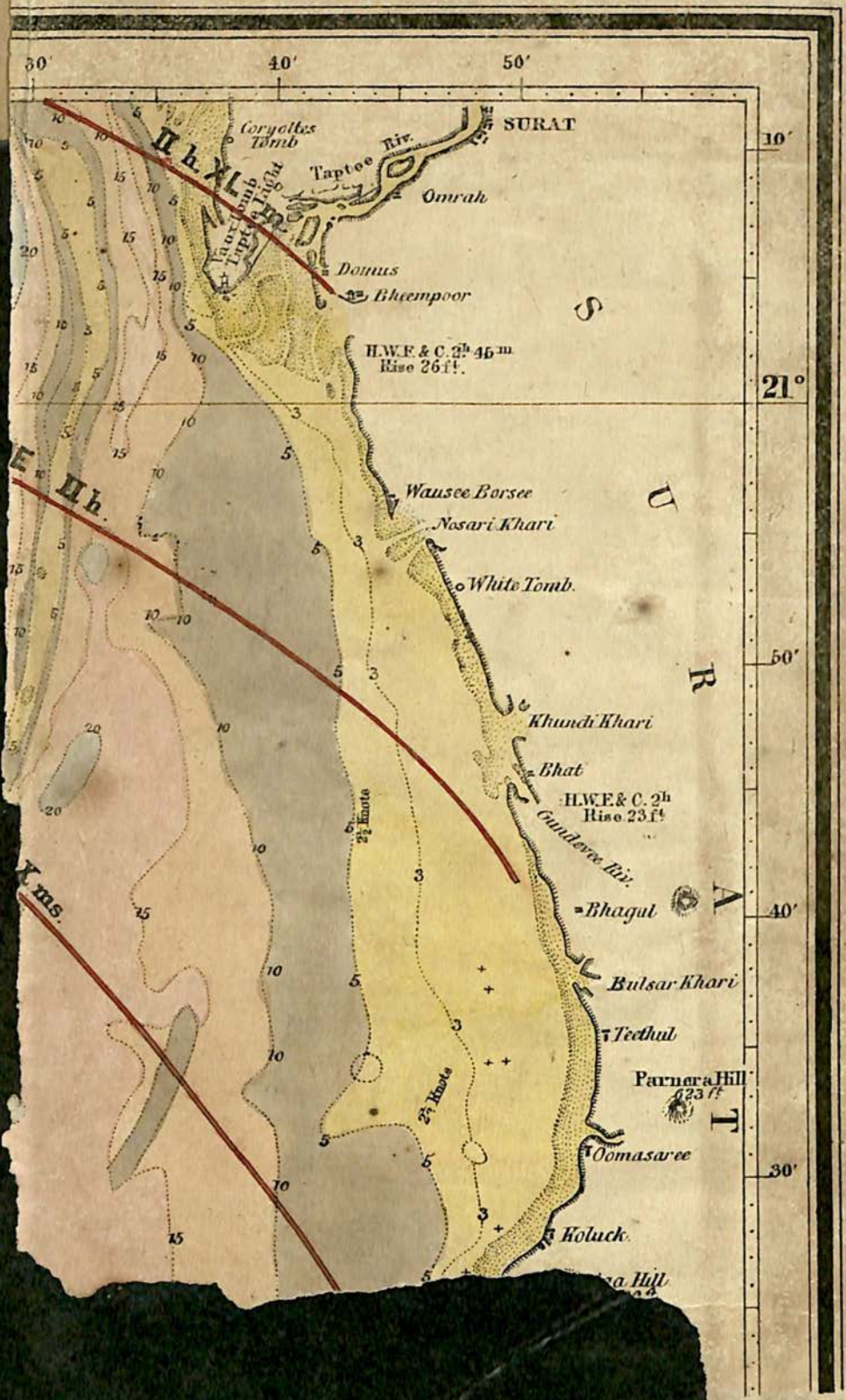
Again at Bombay—it is well known that formerly there were a number of separate Islands, and the tide flowed over what is now called the flats and other parts of Bombay. Opposite Bombay to seaward there is a large and gradually growing bank, called "Direction Bank," which checks the flow of the tidal wave, and consequently decreases the mean sea level in the Harbour, perhaps only a few inches in a hundred years, still the cause and effect are much too palpable to be gainsaid, and it would be quite a mistake to attribute this to a gradual rise of the Island of Bombay.

Another instance may be furnished where a contrary result has taken place by artificial works, namely the Clyde in Scotland. This River had formerly a tidal rise at Glasgow of only 3½ feet, whereas now by removing the sand banks it has a rise of 7 feet at the Broomielair Quay; would it not then be contrary to fact to attribute this to a depression of the adjacent quay walls and of the surrounding country?

This is just exactly what is occurring at the Runn of Kutch; the land is not being depressed, but the tidal wave is being kept or driven back westward, becoming more and more heaped up by the gradually increasing size of the large bank between Goapanath, Jaffrabad, and Diu—as most clearly shown by a Model Chart of this part of the Kattyawar Coast.

Were a chart available of the coast near to Kutch, the action of the sea could be as distinctly shown, and the probable changes readily deduced, without waiting an indefinite period to solve what is really a very simple question; for there is nothing whatever either unaccountable or mysterious exhibited in the phenomena observable at the Gulf of Cambay, the Runn of Kutch, or the intervening Coast line.

In the memoir on the Western Coast Harbours which has been read to, it has been pointed out that there is an oscillation



30'
40'
50'
10'
21°
50'
40'
30'
SURAT
Coryoltes Tomb
Taptee Riv.
Omrah
Domus
Bheempoor
H.W.F. & C. 2h 45m
Rise 26 ft.
Wausee Borsee
Nosari Khari
White Tomb.
Khundi Khari
Bhat
H.W.F. & C. 2h
Rise 23 ft.
Gundevee Riv.
Bhagul
Bulsar Khari
Teethul
Parnera Hill
23 ft
Oomasaree
Koluck
2½ Knots
2½ Knots
S U R A T

of the great tidal wave commencing on the Coast of South Australia, the distance between the node and head of each tide is 30° or 1,800 nautical miles. This curious fact was discovered when laying down the cotidal lines on a chart of the Indian ocean. It is a subject worthy of further investigation, and it is intended to follow it up as opportunities are afforded. The rate at which these great tidal waves travel or are propagated is from 75 to 100 miles per hour. Should a strong wind prevail during a length of time from the direction in which these waves flow, then such disasters follow as those which occurred in Masulipatam and Calcutta in 1864, where the tidal wave swept over the whole country, devastating it for miles. The elevation then attained being doubtless at one period the mean sea level; a few feet of rise would lay an immense extent of country under water both in Bengal, Madras, and Guzerat.

SUPPLEMENTARY MEMORANDUM ON THE GEOLOGICAL ACTION ON THE SOUTH COAST OF KATTYAWAR, AND IN THE RUNN OF KUTCH; *also on the* ADJACENT COAST LINE, AS FAR AS KURRACHEE. *By* WILLIAM SOWERBY, Esq., C.E., F.G.S. *Contributed by the Author. 3rd February* 1868.

In the former Memorandum it was stated that the increase of the tidal rise in the Runn of Kutch, and the apparent subsidence of the land, was because of the great tidal wave being checked from flowing into the Bay of Cambay by the growing bank opposite to Diu Jaffrabad, and Gompanath.

There are two Model Charts accompanying this Memorandum; these Charts show the various soundings by colours, each different colour showing a difference of five fathoms in depth; also the co-tidal lines are indicated by red lines with Roman numerals.

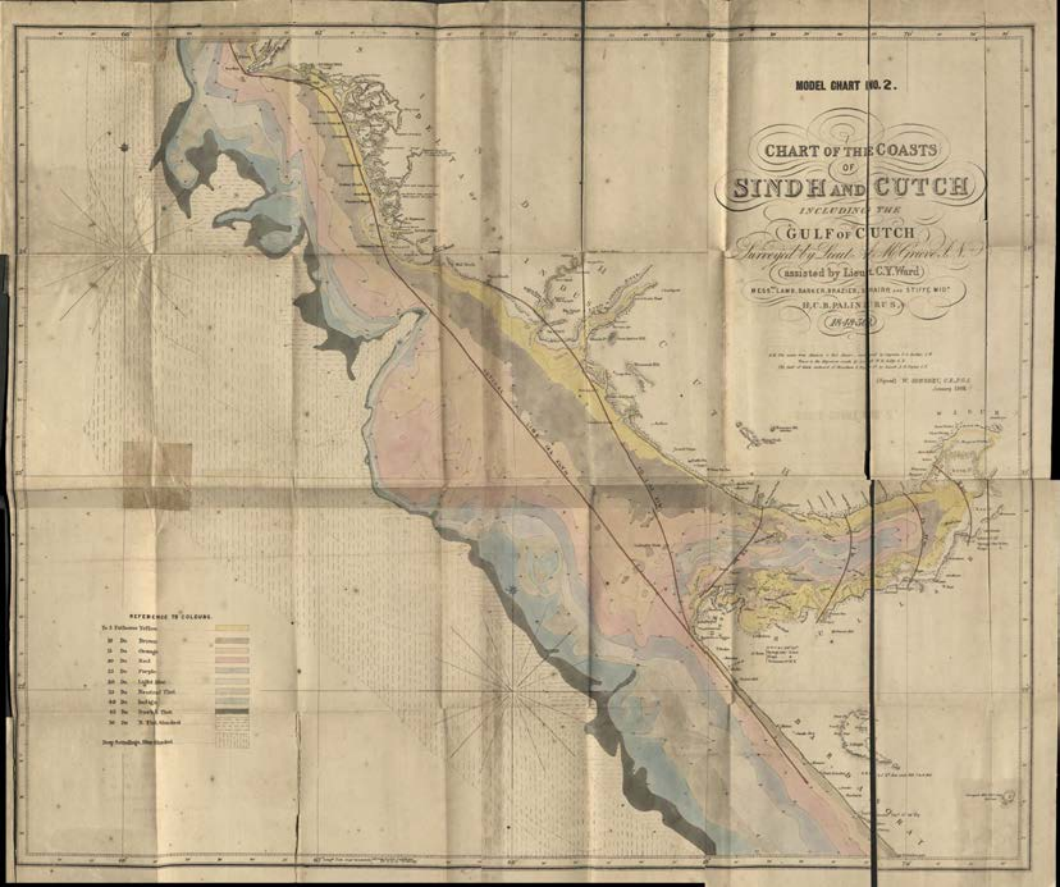
By reference to Model Chart No. I., the action of the scour of the tide will be seen by the formation of a Submarine Bay to the south of Diu Head. This Bay is 35 nautical miles at its broadest point, and it runs in to landward about 12 nautical miles. This Bay is shown where the purple colour indents into the shallower water—(coloured red.)

The comparative velocity with which the tidal wave flows before it is checked by the bank between Diu, Jaffrabad, and Goapanath, and after it has to pass over the bank, is shown by the co-tidal lines, for it flows from opposite Mool-Dwarka to Jaffrabad, a distance of about 50 nautical miles, in 1 hour and 5 minutes, as per Admiralty Tide Tables, namely, from 10 hrs. 30 m. to 11 hrs. 35 m., while from Jaffrabad to Goapanath, a distance also of about 50 miles, it takes from 11 hrs. 35 m. to 2 hrs. 15 m., or two hours and forty minutes, or at little more than one-third of the velocity it travelled over the former fifty miles. The retarding effect of this bank is therefore very conspicuous and decided.

On an inspection of Model Chart No. 2 (which was not in the possession of the Author when the former Memorandum was written), it will be readily seen that there is another very formidable bank which helps to force up the tidal waters into the Runn of Kutch, namely, the bank to the Westward, formed by the sediment and detritus brought down by the Indus. The area of this bank is between 4,000 and 5,000 square miles; and its retarding influence is clearly indicated by its taking two hours and a quarter for the tidal wave to travel 35 miles, namely from Dwarka to Assar point.

The great tidal wave is thus influenced by the submarine groyne to the Eastward, at the entrance of the Gulf of Cambay, between Diu, Jaffrabad, and Goapanath, and by the enormous bank formed by the detritus from the Indus, lying between the mouths of that river and the Gulf of Kutch, and thus the waters are forced up the Runn of Kutch in greater quantity, and to a greater height, gradually increasing from time to time, as the two Banks on either side increase in extent, and the consequent increased effect in retarding the flow of the tidal wave.

There are two submarine bays near the entrance to the Gulf of Kutch, in 20 fathoms water; the one is opposite Veerwarrah, and is 50 nautical miles wide at its outer entrance, and runs 12 miles inwards towards the land. The other is to the Westward of Lushington Shoal, and is about 50 nautical miles wide, and runs inwards for about 20 miles—these are shown by the purple colour—bordering the shallow water (coloured red).


MODEL CHART NO. 2.
CHART OF THE COASTS
OF
SINDH AND CUTCH
INCLUDING THE
GULF OF CUTCH
Surveyed by Lieut. A. McGrove, I.N.
(assisted by Lieut. C. Y. Ward)
MESSRS. LAMB, BARKER, BRAZIER, BONAIRE AND STIFFE MIDS.
H.C.B. PALINURUS.
1848-50
REFERENCE TO COLOURS.

There is also a narrow strip of deep water only about 8 miles wide, called the Swatch. It runs in towards the land for a distance of 35 nautical miles, and is of great depth; in some places it is upwards of 100 fathoms. This is evidently the outlet for the freshes of the River Indus, being immediately opposite the Kaha mouth of that river. The deep water is only about 12 miles from the land. There is a similar swatch, but on a much smaller scale, and of less depth, opposite the Hujamree Mouth.

By reference to Model Chart, No. 1, it will be seen that there is likewise a patch of deep water running up the Gulf of Cambay, but it has only 21 fathoms water, though its length is 50 nautical miles, and greatest width 10 to 15 miles.

Opposite to Manora Point, and between it and Ras-Muari, there is another submarine bay in 20 fathoms water, as shown by the purple colour on the chart. It is about 35 miles wide, and runs about seven miles inwards towards the land. Unfortunately for the Harbour of Kurrachee, this bay happens to be some miles to the westward of the present entrance to that harbour. Immediately facing the entrance to Kurrachee, there is a long line of shallow water, which continues in a south by easterly direction for a distance of 75 nautical miles. The depth and width of this shoal of water is only—

5	fathoms	for five miles out.
10	do.	„ eleven miles out.
15	do.	„ sixteen miles out.
20	do.	„ fully twenty miles.

This gives an average inclination of six feet in a mile, or a gradient of 1 in 900; such a gradient would be considerable in the bed of a confined river, but in the open sea it is comparatively small. This bank or shoal is also formed by detritus brought down by the Indus.

The Harbour of Kurrachee is nothing more than a large lagoon, the set of the tide into it being very sluggish, and not direct, but round a long corner, so to speak, taking as it does three quarters of an hour to travel from the Gisri Mouth to Kurrachee, a distance of only eight miles, and with a tidal rise of but from six to nine feet, and one to two fathoms water at the entrance during low water.

If the long bank opposite to the entrance to this Harbour be formed by the detritus of the Indus (of which there can be little doubt), then the

keeping open of a deep channel round Manora Point must be always a matter of anxiety, and attended with great cost; and in the event of any mistake, it must end in hopeless disappointment. The final silting up can doubtless be retarded, and even prevented by proper works; but it may on the contrary be hastened by injudicious treatment.

By inspection of the two Model Charts, it will be seen that the submarine projecting shallow points and deep water swatches almost invariably run south-west, and north-east, being the direction from which the great tidal wave flows, and also the direction of the strongest prevailing winds. This very clearly indicates that the action of the sea on its bed extends to a much greater depth than that usually assumed, (namely, 10 fathoms), for these furrows on the bed of the sea are distinctly traceable to a depth of fully fifty fathoms.

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